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**Remedial Action
Construction Summary Report**

**Combined Sheet Pile and Soil-Bentonite
Barrier Wall**

**McCormick & Baxter
Creosoting Company
Portland, Oregon**

Task Order No. 71-03-12

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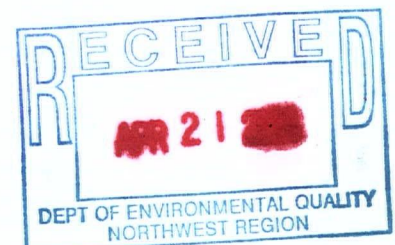
Prepared for:

OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY
811 Southwest Sixth Avenue
Portland, Oregon 97204

USEPA SF



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intentionally left blank.

List of Acronyms

ACLs	Alternate Concentration Limits
AINW	Archaeological Investigations Northwest
APR	air-purifying respirator
ASA	Archeological Sensitive Area
ASTM	American Society for Testing and Materials
BGS	below ground surface
BIOP	Biological Opinion
BMP	best management practices
BMRP	Biological Monitoring and Reporting Plan
BNRR	Burlington Northern Railroad
COP	Construction Operations Plan
CQAP	Construction Quality Assurance Plan
CQC	Construction Quality Control Plan
DAF	dissolved air flotation
DAS	Oregon Department of Administrative Services
DEA	Dean Evans and Associates
DEQ	Oregon Department of Environmental Quality
DNAPL	denser-than-water non-aqueous-phase liquid
E & E	Ecology and Environment, Inc.
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act
ESD	Explanation of Significant Difference
FTE	Focused Technology Evaluation
FWDA	Former Waste Disposal Area
GAC	granular activated carbon
HDPE	high-density polyethylene
ICE	International Construction Equipment

List of Acronyms (Cont.)

LNAPL	lighter-than-water non-aqueous-phase liquid
McCormick & Baxter	McCormick & Baxter Creosoting Company, Portland Plant
mg/L	milligrams per liter
NAPL	non-aqueous-phase liquid
NGVD	National Geodetic Vertical Datum
NOAA	National Oceanic and Atmospheric Administration
NOAA Fisheries	National Oceanic and Atmospheric Administration National Marine Fisheries
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
OSHA	Occupational Safety and Health Administration
OWRD	Oregon Water Resources Department
PacRim	PacRim Geotechnical, Inc.
PAHs	polynuclear aromatic hydrocarbons
PCP	pentachlorophenol; Pollution Control Plan
PCP	Pollution Control Plan
QA	quality assurance
QC	quality control
QCI	Quality Control Inspector
RA	remedial action
RAOs	remedial action objectives
RD	remedial design
ROD	Record of Decision
S-B	soil-bentonite
STA	station
SWPPP	Stormwater Pollution Prevention Plan
TFA	Tank Farm Area
T & M	time and materials
UPRR	Union Pacific Railroad
USACE	United States Army Corps of Engineers

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Introduction

Ecology and Environment, Inc., (E & E) under contract with the Oregon Department of Environmental Quality (DEQ), has prepared this Remedial Action (RA) Construction Summary Report to document remedial actions implemented to address contaminated groundwater at the McCormick & Baxter Creosoting Company, Portland Plant (McCormick & Baxter) Superfund Site in Portland, Oregon (Figure 1-1). The site is a state-led project managed by the DEQ under a cooperative agreement with the United States Environmental Protection Agency (EPA). The site is considered an "orphan site" in accordance with state rules and is managed by DEQ's Site Response Section. DEQ and EPA oversee the implementation of Remedial Design (RD)/RA activities, cooperatively.

This document has been prepared under DEQ Task Order No. 71-03-02, which concerns implementation of RD/RA activities at the site in accordance with the remedy described in the *Record of Decision* (ROD; EPA/DEQ 1996), the March 1998 *ROD Amendment* (EPA/DEQ 1998), and the August 2002 *Explanation of Significant Difference* (ESD; EPA/DEQ 2002). The RA addressed by this document consists of the construction of a combined sheet pile and soil-bentonite (S-B) subsurface vertical barrier wall, which was identified in the ROD as a contingent component of the groundwater remedy (see Section 1.2, below).

1.1 Site Location and Description

Located on the east bank of the Willamette River near river mile 7, the site encompasses approximately 43 acres on land and 15 acres in the river. The site is situated downstream of Swan Island and upstream of St. John's Bridge. The upland portion is on a terrace of imported sand fill (dredged material placed in the early 1900s) within the floodplain of the Willamette River. The upland area is generally flat and lies between a 120-foot-high bluff along its northeastern border and a 20-foot-high bank along the Willamette River to the southwest. A sandy beach is exposed at the base of the bank except during periods of high river stage, which generally occurs during late winter or early spring.

The site is bordered near the river by industrial properties and on the bluff by a residential area. A Burlington Northern Railroad (BNRR) spur crosses the western portion of the property and the Union Pacific Railroad (UPRR) borders

the site to the east below the bluff. The entire perimeter of the property is fenced, and warning signs are posted on the fence.

The property is accessed via the partially paved North Edgewater Street, which leads from Willamette Boulevard to the main gate near the northwest corner of the site. The driveway leading into the property and the parking lot are paved; the remainder of the property is unpaved, covered with gravel, or vegetated. Two construction trailers are maintained in the parking lot area to provide office space, storage, and personnel decontamination facilities for ongoing site activities. The remaining aboveground structures on site include: a former shop building that used to house a water treatment system (no longer in operation) and other equipment/supplies; a freight container located near the western property corner, which also formerly housed a water treatment system (no longer in operation); four aboveground tanks used for water treatment operations (no longer in operation); a small metal shed containing a water service backflow prevention device; several utility poles; and a wood retaining wall and pilings along the river bank. All other aboveground structures and buildings were removed during previous RA activities.

1.2 Site Background and ROD Requirements

McCormick & Baxter was founded in the early 1940s to produce a variety of treated wood products during World War II. Various wood treatment processes were used at the site including pentachlorophenol (PCP), creosote formulations, ammoniacal copper/zinc arsenate, a copper/chromium/arsenic formulation, and Cellon. Site investigation between 1983 and 1990 revealed many releases of chemical compounds to soil, groundwater, and sediment. Contaminants detected at the site include polynuclear aromatic hydrocarbons (PAHs, comprising about 85% of creosote constituents), PCP, arsenic, chromium, copper, and zinc. In 1990, the wood treatment operations ceased and early remedial actions were initiated to remove process equipment, piping, tanks, treatment formulations, and other items.

The ROD identifies selected remedies for contaminated soil, sediment, and groundwater. Over the past several years, a number of inspections, investigations, and RAs have been performed at the site. Notably, Phase I of the soil remedy was performed in 1999, where the most highly contaminated soil was excavated to 4 feet below ground surface (BGS) and disposed of off site as hazardous waste. Clean, sandy fill was placed in those areas that were excavated. The ROD indicates that the next phase of the soil remedy will involve installation of a site cap. RD for this phase is scheduled to be completed in 2004.

For sediment, the ROD specifies installation of a cap over the contaminated sediments. The RD for this medium of concern is scheduled to be completed in the fall of 2003, with construction scheduled to be performed in 2005.



The remedy for groundwater consists of the following major elements:

- Enhancement of NAPL recovery using pure-phase extraction and/or groundwater/NAPL extraction (implemented 1994 to 1998; ongoing as manual extraction);
- Evaluation by pilot testing of innovative technologies, such as surfactant flushing, to increase the effectiveness and the rate of NAPL removal (has not yet been performed);
- Treatment of groundwater using methods such as dissolved air flotation (DAF), filtration, carbon absorption, extended aeration/packed bed bioreactor, or other biological treatment (implemented 1994; suspended September 2000);
- Discharge of treated groundwater to the Willamette River in accordance with substantive National Pollutant Discharge Elimination System (NPDES) requirements (implemented 1994; suspended September 2000);
- Treatment and/or disposal of NAPL and other treatment residuals off site in accordance with applicable hazardous waste regulations (implemented 1994; ongoing);
- Monitoring to ensure that site-specific alternate concentration limits (ACLs) are met at compliance monitoring locations (implemented March 1996; ongoing);
- A contingency to install a vertical physical barrier in the event that mobile NAPL cannot be controlled reliably using hydraulic methods or if the barrier would improve the overall cost-effectiveness of the groundwater remedy (addressed in this document); and
- Installation of controls that restrict groundwater use at the site (implemented 1994).

The groundwater remedy implemented at the site was designed to separate NAPL from the groundwater and to treat groundwater removed from the Tank Farm Area (TFA) through total fluid extraction. A DAF/granular activated carbon (GAC) system treated the extracted groundwater. In addition, pure-phase NAPL extraction was performed in the TFA and the Former Waste Disposal Area (FWDA). Monitoring wells in the FWDA were used for pure-phase NAPL extraction only, as groundwater was not extracted.

The goals of the NAPL extraction were to reduce the NAPL pools to residual levels (to the extent possible) and to minimize or prevent active migration of the NAPL into the Willamette River and its sediment. The residual level (i.e., the percentage of NAPL left in soil pore spaces) necessary to totally prevent pool migration is unknown. However, wells were pumped (either through total fluid or pure-phase extraction) until oil was not visible in the discharge. Then, wells were

monitored periodically to ensure an active pool had not reaccumulated at a given well location.

In fall 1998, the DAF/GAC system was removed from the TFA and replaced with oil/water separation, resin columns, and GAC.

Currently, NAPL extraction at the site includes manual lighter-than-water NAPL (LNAPL) skimmers in select monitoring wells and manual LNAPL and denser-than-water NAPL (DNAPL) extraction using pneumatic pumps. The automated extraction and treatment systems in the TFA and FWDA were shut down in September 2000 because of a sitewide decrease in NAPL occurrence in monitoring wells and because similar quantities of NAPL can be extracted manually with less labor effort and cost than that associated with the treatment systems.

Routine groundwater/NAPL depth and thickness measurements and semiannual groundwater sampling continue to be conducted at the site. Based on the overall performance of the current groundwater remedy, the remedy appears to be meeting the ACLs for groundwater at the site (*Five Year Review Report*, DEQ 2001).

However, ongoing monitoring indicated that the groundwater remedy was not preventing the discharge of NAPL from the site to the Willamette River and its sediment. For example:

- Along the beach, several monitoring wells downgradient from the FWDA continued to show measurable NAPL thicknesses;
- NAPL seeps were observed to be discharging to Willamette Cove as a result of extreme regional and sitewide low-water conditions;
- NAPL seeps on the beach downgradient from the FWDA have been consistently observed during low river stages;
- Hydraulic control of NAPL or groundwater has not been established in either the TFA or the FWDA; and
- Groundwater flow gradients toward the river, documented in past quarterly and semiannual reports, have been measured.

Because NAPL discharges to the river were continuing, DEQ and EPA elected to evaluate the contingency for barrier wall installation. A *Barrier Wall Focused Technology Evaluation* (FTE) was prepared in 2001 by E & E to assess barrier wall alignments, installation technologies, implementability, associated costs, and other considerations. Based on findings from the FTE and ensuing discussions, DEQ and EPA elected to implement construction of a combined sheet pile and S-B barrier wall to attain hydraulic control of NAPL and groundwater and reduce off-site NAPL migration. The selected alignment consisted of a fully

encompassing wall; the downgradient portion (paralleling the Willamette River) would be constructed of sheet pile, and the upgradient/upland portion would be constructed with S-B backfill using the slurry trench method.

In August 2002, EPA and DEQ issued an Explanation of Significant Difference (ESD), which provided the justification for implementing the vertical barrier wall. The remedial design for the barrier wall was conducted in late 2001 and early 2002, with design completion in September 2002. The design was prepared by E & E with input from the entire project team including the DEQ, EPA, United States Army Corps of Engineers (USACE), and National Oceanic and Atmospheric Administration (NOAA). Significant design issues included determination of the wall depth that would ensure NAPL containment, finalizing the wall geometry and material specification (i.e., steel sheet pile and soil-bentonite slurry), and accommodating a high-pressure sewer line adjacent to the site. A *Biological Assessment* for construction of the barrier wall was submitted by EPA to NOAA Fisheries and the U.S. Fish and Wildlife Service in June 2002 (EPA 2002). A *Biological Opinion*, pursuant to Section 7 of the Endangered Species Act, was issued by NOAA Fisheries in August 2002.

In October 2002, E & E prepared contract documents for the construction of the combined barrier wall, which included contract requirements, technical specifications, and drawings. Thereafter, the DEQ, with assistance from the Department of Administrative Services (DAS), solicited bids for construction of the wall. On December 3, 2002, the contract was awarded to Remtech, Inc., of Tacoma, Washington. Notice to Proceed was issued on January 7, 2003.

1.3 Report Objectives and Organization

The purpose of this report is to:

- Provide a summary of the barrier wall installation RA site activities performed by E & E and Remtech, including descriptions of construction methods and quantities of materials installed, removed, and/or replaced;
- Provide a summary of laboratory results for S-B wall quality control testing;
- Explain modifications made during the RA to the original RA, including a discussion of why changes were made;
- Present a condensed summary of the weekly reports provided to DEQ, including a chronology of major events;
- Describe sewer line monitoring activities and results;
- Present a summary of biological and pollution control monitoring activities;
- Describe community/tribal relations and archaeological monitoring activities performed;
- Present Record Drawings showing the new site layout;

- Present photodocumentation; and
- Document RA construction quantities and costs.

This report has been prepared in accordance with the *Construction Quality Assurance Plan* (CQAP) submitted by E & E to DEQ in March 2003 (E & E 2003a). The organization of this report is as follows:

- Section 2 provides details of the RA implementation including contracting and subcontracting; a summary of pre-construction and construction activities; problems encountered, corrective actions, and project deviations; oversight and monitoring activities (i.e., sewer line, archaeological, and biological monitoring); health and safety; community relations; documentation (e.g., photodocumentation and record drawings); and a chronology of major events;
- Section 3 documents RA construction quantities and costs; and
- Section 4 lists the references used to complete this report.

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Remedial Action Implementation

The following subsections provide details of the RA implementation including contracting and subcontracting; pre-construction activities; construction activities; problems encountered, corrective actions, and project deviations; construction oversight and monitoring activities; health and safety; community relations; documentation; and chronology of major events.

2.1 Contracting and Subcontracting

DEQ contracted E & E to provide environmental engineering and consulting services to implement RD/RA activities including oversight of remedial actions and the remedial contractors. All activities were conducted in accordance with the ROD, amended ROD, ESD, and DEQ task orders. E & E has been responsible for preparation of work plans, implementation of field investigation activities, preparation of data summary documents, and preparation of the engineering designs and specifications related to remediation activities. E & E has also provided assistance to DEQ regarding preparation of the contract documents required for procurement of the remedial construction contractors.

For the RA construction phase of the project, E & E provided construction oversight services and technical management assistance to DEQ. In this role, E & E assisted DEQ with public relations, project data management, reporting and documentation, resolution of technical issues, and approval of technical submittals. During the RA, E & E utilized two full time oversight engineers to monitor contractor performance and compliance with the contract requirements; conduct inspections; and document work progress and modifications. In addition, during construction work within 100 feet of the Willamette River, E & E utilized a full time on-site biological monitor to oversee implementation of the Biological Monitoring and Reporting and Pollution Control Plans (see Section 2.5.2.1).

E & E subcontracted Geotech Explorations, Inc. (Geotech), of Tigard, Oregon, to install three ground movement monitoring devices related to the protection of two City of Portland pressure sewer lines during slurry trench construction (see Section 2.5.2.2). PacRim Geotechnical, Inc. (PacRim), of Portland, Oregon, was also subcontracted by E & E to assist with the design, installation, and monitoring of these devices. During construction work along the Willamette River, E & E



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utilized West Coast Marine Cleaning of Portland to provide boom deployment services during construction work along the Willamette River. Following barrier wall construction, Geotech was again subcontracted to install well clusters for performance monitoring of the wall (see Section 2.9). Lastly, E & E subcontracted Northwest Hydromulchers, Inc., of Boring, Oregon, to hydroseed disturbed areas of the site following wall construction (see Section 2.3.4).

After a competitive public procurement process by the DAS and DEQ, the construction contract was awarded to Remtech. Remtech and their subcontractors were responsible for the physical implementation of the fieldwork specified in the contract documents. Remtech was DEQ's prime contractor for the project. As the prime contractor, Remtech provided physical labor and operations management for the project. Remtech also provided project management of the subcontractors and material/equipment vendors that were required to complete construction of the barrier wall. Subcontractor and vendor lists are provided below:

Subcontractors:

- Geo-Solutions, Inc., of Pittsburgh, PA – Provided slurry wall project superintendent and miscellaneous equipment.
- David Evans & Associates, Inc., of Portland, OR – Provided surveying services.
- Sierra Testing Laboratories of Eldorado Hills, CA – Provided off-site testing laboratory services.
- Tacoma Pump and Drilling of Tacoma, WA – Provided well abandonment/construction and drilling services.
- Pacific Wire and Fence Co. of Clackamas, OR – Provided fence repair/restoration services.

Vendors:

- Skyline Steel Corporation of Gig Harbor, WA – Supplied sheet pile material.
- Wyo-Ben, Inc., of Billings, MT – Supplied Naturalgel bentonite material.
- Wilkins Trucking of St. Helens, OR – Supplied clay for S-B mix.
- Scarsella Construction of Auburn, WA – Provided long-boom excavator (rental).
- International Construction Equipment (ICE) of Seattle, WA – Provided vibratory hammer and power unit for sheet pile driving operations (rental).
- Essex Crane of Sacramento, CA – Provided cranes for sheet pile installation (rental).
- Hertz Equipment Rental of Portland, OR – Provided general construction equipment (rental).
- Northwest Linings of Kent, WA – Supplied silt fencing, biobags, and erosion control mat materials.

During construction work in archeological sensitive areas (ASAs), DEQ also contracted Archaeological Investigations Northwest (AINW) to monitor slurry trench excavation for potential artifacts of Native American origin (see Section 2.5.2.3).

An organization chart summarizing the project contractors, subcontractors, and their associated roles is included as Figure 2-1.

2.2 Pre-Construction Activities

This section summarizes the pre-construction activities performed including meetings, submittal preparation, and permitting.

2.2.1 Pre-Construction and Preparatory Meetings

Prior to construction activities, a required pre-construction meeting and several preparatory meetings were held.

On January 7, 2003, E & E conducted a pre-construction meeting. Attendees included DEQ's project manager and contract officer; E & E's project manager, project engineer, and oversight engineers; and Remtech's key project personnel including the project manager, site superintendent, and S-B wall subcontractor, Geo-Solutions, Inc. Topics presented and discussed during the meeting included staff introductions, a construction activity overview, project roles and responsibilities, construction schedule, submittal requirements, and change order management.

Several preparatory meetings were also conducted by Remtech as part of their Construction Quality Control (CQC) plan. Following USACE procedures for preparatory meetings, Remtech's Quality Control Inspector (QCI) prepared preparatory phase checklists related to each definable work feature and discussed related project requirements for each feature including procedures; materials testing, submittals, delivery, and storage; contract specification compliance; preliminary work and permits; and safety.

2.2.2 Submittals

Per Section 01300 of the *Contract Documents for the Combined Sheet Pile and Soil-Bentonite Barrier Wall* (E & E 2002), Remtech and their subcontractors and/or vendors were required to prepare submittals including plans [e.g., construction operations plan (COP), health and safety plan, slurry wall design mix report, etc.], shop drawings, and product data on materials and equipment. The submittals were prepared in accordance with the time requirements specified in the Contract Documents and were submitted to E & E and DEQ for review/approval prior to plan implementation and/or material/equipment purchase

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and/or delivery. Appendix A contains product data submittals from vendors for the major components used in construction of the barrier wall.

2.2.3 Permits and Regulatory Compliance

Prior to commencing construction activities, Remtech was required to obtain a National Pollutant Discharge Elimination System (NPDES) Storm Water Discharge Permit #1200-C from DEQ. This storm water control permit covered construction activities including clearing, grading, excavation, and stockpiling and authorized construction/operation of erosion and sediment control measures and storm water management in conformance with permit requirements. Consistent with the requirements of the NPDES 1200-C permit, Remtech also developed a *Stormwater Pollution Prevention Plan* (SWPPP) to describe the best management practices (BMPs) to minimize erosion and sediment runoff at the site; identify, reduce, eliminate, or prevent the pollution of stormwater; and prevent violations of surface water quality or groundwater quality standards. Copies of the 1200-C permit and the SWPPP are included in Remtech's COP (Remtech 2003).

Substantive compliance with regulations prescribed under the Endangered Species Act (ESA) was also required since barrier wall construction activities had the potential for impact to listed salmonid species (e.g., chinook salmon) in the Willamette River. E & E developed a *Biological Monitoring and Reporting Plan* (BMRP) and a *Pollution Control Plan* (PCP) that were used by field oversight personnel to implement conservation measures prescribed in the National Oceanic and Atmospheric Administration National Marine Fisheries (NOAA Fisheries) *Biological Opinion* (BIOP; NOAA Fisheries 2002). The BMRP and the PCP are included as appendices to E & E's CQAP (E & E 2003a). See Section 2.5.2.1 for additional details associated with the development and implementation of these plans.

2.3 Construction Activities

Construction of the barrier wall consisted of the following major components: mobilization and site preparation; sheet pile wall construction; S-B wall construction; and site restoration and demobilization. Details related to each of these components are provided below.

2.3.1 General Mobilization and Site Preparation

2.3.1.1 General Mobilization

The two existing site trailers located in the support zone (paved entrance area) were used by E & E, DEQ, and visitors for office and contamination reduction facilities. Remtech mobilized and installed a temporary office trailer adjacent to the existing trailers for their own use. Remtech's trailer was temporarily connected to telephone and electric utilities for the construction duration. Portable field lavatories with handwash stations were also provided by Remtech.



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The existing boot wash and vehicle decontamination pad were used throughout construction. Remtech supplied pumps and cleaning tools for maintenance of the pad. Remtech mobilized a pressure washer for vehicle/equipment decontamination; however, on occasion, the existing (DEQ-owned) pressure washer was used. Remtech also supplied three spill kits (positioned near work areas), to assist in the quick control of spilled hazardous materials (e.g., fuel). Each kit consisted of a 55-gallon drum with absorbent pads, absorbent booms, plastic bags, and personal protective equipment.

The majority of the construction materials and equipment were mobilized to the site via North Edgewater Street. To allow for easier crossing of the Union Pacific Railroad, additional crossing sections were installed and additional ballast material was placed and graded adjacent to the crossing area. Most of the construction equipment was stored outside, within the site boundary. Specific materials and equipment related to construction of the sheet pile and S-B walls are discussed in Sections 2.3.2 and 2.3.3, below.

2.3.1.2 Site Preparation

Clearing and Grubbing

Vegetation and debris were cleared from the immediate work areas. Clearing and grubbing consisted of removing unwanted materials from the work area (i.e., working platform) along the planned barrier wall route including trees, stumps, roots, brush, downed timber, and rubbish. Along the Willamette River shoreline, materials were given special attention, as prescribed by the BIOP. Initial attempts were made to displace the woody debris from the shoreline to the upland area; however, the debris proved to be too fragile (e.g., rotten) for removal using the equipment available. A determination was made that the woody debris was less impacted by carefully pushing it slightly riverward, to allow enough room for the installation of the erosion control measures and construction of sheet pile working platform.

A considerable amount of refuse was generated during the clearing/grubbing process. Large woody debris (e.g., tree trunks) was consolidated and stockpiled separately from smaller woody debris (e.g., limbs and brush), treated wood, metal, and other non-vegetative matter. The large woody debris remains stockpiled on-site at designated upland locations. The smaller debris, treated wood, and non-vegetative matter were buried on-site (per Change Order 6; see Section 2.4) in a constructed disposal cell located north of the formerly constructed concrete debris disposal area.

Installation of Erosion and Pollution Control Measures

Following clearing activities along the shoreline and prior to the commencement of near-shore construction activities (e.g., sheet pile working platform construction), Remtech installed erosion control measures including silt fencing and bio-bags (i.e., compost socks). The silt fencing was installed continuously



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along the sheet pile wall alignment from the upland area near the top of the bank slope, down the slope, then along the toe of the slope (paralleling the river) at a sufficient distance from the wall centerline to allow for working platform construction. The bio-bags were placed landward of the silt fencing and were overlapped for increased protection.

Prior to sheet pile driving activities, E & E's subcontractor, West Coast Marine, deployed a skirt boom in the Willamette River along the shoreline in the area of sheet pile installation. The boom served as defensive quick response equipment in the event of NAPL seepage or spills impacting the river. The boom was moved in accordance with locational changes in construction activities.

Well Abandonment

A total of 14 monitoring wells, which were located within the area of work and whose damage could not otherwise be avoided, were abandoned. Of the fourteen abandoned, eleven (EW-6s, EW-11s, EW-13s, MW-4s, MW-13i, MW-16s, TM-1s, TM-2s, TM-3s, TM-4s, and TM-5s) were specified in the Contract Documents and three (MW-Fs, EW-3s, and MW-19s) were identified during wall layout activities as being located within the area of work. In addition, two wells (EW-14s and EW-16s) were damaged during construction that required abandonment and re-installation. Remtech's subcontractor, Tacoma Pump and Drilling, performed the well abandonment/installation services. All monitoring wells were abandoned and installed in accordance with Oregon Water Resources Department (OWRD) requirements (e.g., boreholes were over-drilled and grouted with bentonite).

Layout Surveying

Remtech subcontracted David Evans and Associates (DEA) to perform layout surveying services. The planned wall alignment was laid out from the established control points, benchmarks, and baselines indicated on the design drawings. Wall centerline and associated offset stakes were installed at 50-foot intervals and at wall turning points, changes in wall depth, and significant ground surface slope changes. Station numbers, coordinates, and ground surface elevations were recorded at each point.

2.3.2 Sheet Pile Wall Construction

2.3.2.1 Materials and Equipment

Sheet Piles

Profilarbed AZ 25 sheet piles and Profilarbed OMEGA 18 corners (manufactured by International Sheet Piling Company, Luxembourg) were used to construct the sheet pile wall. The sheet piles are made of heavy gage, hot-rolled steel conforming to ASTM A 572/A 572M Grade 50 and have the following material properties:

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1. Web thickness of 0.441 inches (minimum 0.375 inches required per addendum to the Contract Documents);
2. Back thickness of 0.472 inches (minimum 0.45 inches required);
3. Weight of 61.49 pounds per lineal foot (minimum of 58 pounds per lineal foot required); and
4. Section modulus 94.3 cubic inches (minimum of 40 cubic inches required).

Cranes

Two cranes (Manitowac 4000W Vicon and 3900W Vicon) were used for truck off-loading and installation of the sheet piles. The cranes were mobilized to the site one week prior to the scheduled mobilization date (per Change Order 1; see Section 2.4) and were assembled onsite.

Vibratory Hammer and Power Unit

An International Construction Equipment (ICE) 4450 vibratory hammer was used to install the sheet piles. Determination of the hammer type and size was made by ICE, as requested by Remtech. As a general rule of thumb, the hammer should have at least 0.16 inches of amplitude. Based on the weight of the AZ 25 sheets, hammer weight, and expected geologic conditions, ICE calculated the amplitude to be approximately 0.78 inches. Therefore, the selected hammer was deemed sufficient for installation of the sheet piles.

2.3.2.2 Installation

Prior to sheet pile installation, erosion control measures (e.g., silt fencing and bio-bags) were installed between the working area and the Willamette River. Following erosion control measure installation, an approximately 30-foot-wide working platform was constructed along the surveyed alignment stakes using a dozer. The platform provided easy and safe access for laborers and equipment and a level working surface for sheet pile installation.

Approximately 97,400 square feet (1,440 linear feet) of sheet piles were installed using a panel driving technique. The installation technique consisted of setting and partially driving six to eight sheet pile pairs (a panel). Each newly placed pair was checked for plumb and alignment. Alignment was controlled using a template of two welded I-beams, which was placed along the surveyed wall alignment. Before the first panel was driven to grade, a second panel was set and partially driven. After setting the second panel, the sheet piles in the first panel were driven in reverse order of setting.

Each sheet pile pair was lifted and lowered into place using a crane. After the pair was fed into the interlock of the previously set pair, the sheet pile drivers were able to release the sheet pile from the crane with the aid of specialized pin clamps and trip lines. Actual driving of the sheet was accomplished using the vibratory hammer suspended and lowered onto the sheet pile using the second crane.



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Hydraulic lines connected the power/control unit to the hammer. Using the control switch panel, the sheet pile drivers were able to open and close the vice clamp, turn the vibration on and off, and change the frequency at which the vibrator operated.

Sheet piles were installed to design depths except at two locations (near STA 8+50 and STA 15+00), where difficult driving resulted in sheet pile refusal. A total of eight half-pair sheets met with refusal prior to reaching design depths. See Section 2.4 for additional details related to this matter.

The sheet pile wall was terminated where it intersected with the S-B wall near stations 1+00 and 15+40. At these locations, sheet piles were driven to depth within the S-B mix, then anchored into undisturbed earth beyond the S-B wall limits. Tie-in details at each location are shown on Figure 2-2.

After sheet pile wall completion, five extra sheet pile pairs and several individual sheets remained (note, Remtech purchased additional sheets to account for possible alignment changes, refusals, etc.). The extra sheet pile pairs include three pairs of 70-foot long, one pair of 60-foot long, and one pair of 80-foot long sheets. The individual sheets include six of 70 feet long, one of 60 feet long, and approximately ten assorted sheets greater than 5 feet in length. A few of the individual sheets were damaged during installation attempts and are no longer usable for sheet pile wall installations. The extra sheets are currently stockpiled near the north corner of the site.

2.3.2.3 Quality Control

Following guidelines presented in Remtech's COP, Remtech's QCI monitored, controlled, and documented sheet pile material delivery, storage/handling, and installation for compliance with contract requirements. Each sheet pile delivery was inspected for damage and conformance with design quantities/lengths.

During sheet placement and driving operations, Remtech personnel checked each sheet pile pair for plumb vertical alignment by using a level. In addition, E & E's oversight engineer performed random inspections on select sheets throughout the project to confirm the sheets were installed plumb.

Remtech also completed sheet pile driving records on a daily basis, documenting sheet number, sheet length, penetration rate (e.g., refusals), pile station location, tip elevation, ground elevation, and top or cut off elevations. The records were submitted to DEQ at project completion. E & E's oversight engineer also monitored and recorded sheet installation progress on a daily basis to ensure that the appropriate sheet lengths were utilized, especially at transitions and changes in grade.

2.3.3 Soil-Bentonite Barrier Wall Construction

2.3.3.1 Materials and Equipment

Bentonite Slurry

The slurry, comprised of a mixture of Naturalgel bentonite (manufactured by Wyo-Ben, Inc.) and water, was mixed on site in a 40-feet by 60-feet by 6-feet deep slurry mixing pond. Water was obtained from the fire hydrant located north of the metal shop building. A high-pressure venturi jet mixer was used in conjunction with a high-speed/high-shear centrifugal pump to produce the slurry mixture. A diesel driven conveyance pump was used to either hydraulically circulate or transfer the slurry to the trench.

S-B Mixture

Prior to construction activities, Geo-Solutions performed compatibility testing using onsite soils and water to determine the S-B mix design. The soils were taken from the most contaminated portion of the site, the FWDA, and were extracted using split spoon sampling at every 5 feet. After testing the composite soils, Geo-Solutions determined that the percentage of fine material (percentage passing a number #200 sieve) was too low and suggested augmentation with locally available clay. Based on the results of their design mix testing program (Geo-Solutions 2003) and considering their own experience with similar sites, Geo-Solutions recommended the following mix design parameters:

- Utilize soils from the site excavation to the maximum extent possible. If natural fines are less than 20%, use clay material (from Wilkin's Trucking; see Vendor's list in Section 2.1) to amend in an amount equal to 10% (or less if the percent fines of the mix exceeds 20%).
- Add 2% bentonite (by dry weight) to the backfill material.
- Adjust dry weights based on field measurements.
- Add bentonite slurry taken from the trench or freshly mixed slurry to achieve the required slump.

Sampling and testing of the S-B mixture was performed throughout the wall construction. Testing was performed using both an onsite mobile laboratory by the slurry trench specialist from Geo-Solutions and at a State-approved offsite laboratory. Sampling and testing techniques and results are presented in Section 2.3.3.3, below.

Long Boom Excavator

A Komatsu PC1100 (110 metric tons) long-boom excavator was used to perform the slurry wall trenching. This specialized piece of equipment allows excavation to 72 feet BGS.



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2.3.3.2 Installation

Approximately 114,611 square feet (2,355 linear feet) of S-B wall was installed. The primary construction components included working platform construction; utility protection; trench excavation; slurry preparation and conveyance; S-B mixing and placement; and installation of a protective cap.

Prior to trench excavation, a working platform was constructed along the surveyed alignment stakes using conventional earth moving equipment (e.g., dozer, excavator, and front-end loader). In the two deeper sections (between STA 15+00 and STA 20+00 and between STA 36+50 and STA 38+67), the platform was constructed at the grade of the top of the wall, necessitating a cut between five and eight feet. The working platform was constructed approximately 100 feet wide to accommodate the PC1100 excavator and its swing. Containment berms were constructed along both sides of the working platform to prevent slurry run-off.

Buried utilities intersecting the S-B wall were protected prior to slurry trench excavation. Several site water lines crossing the wall alignment were cut and capped (with a mechanical joint blind flange), then thrust-blocked with concrete. A section of an old abandoned production well line, encountered east of the metal shop building, was also removed. Protection/monitoring of the City of Portland pressure sewer lines is discussed in Section 2.5.2.2, below.

After working platform and utility protection were completed, slurry trench excavation commenced. The process of slurry trench/S-B wall construction is controlled by specific gravities. The excavated trench was held open using a slurry mix of bentonite and water, which was later displaced by the denser S-B mixture. Upon trench excavation, slurry was pumped from the slurry mixing pond to the trench via 6-inch high-density polyethylene (HDPE) conveyance piping. As the long-boom excavator operator advanced along the wall alignment and reached design depth, S-B mixture was placed within the trench, displacing the lighter slurry. The S-B mixing operation was performed within the interior of the wall's perimeter and occurred concurrently with trench excavation. The S-B mixture consisted of soil excavated from the trench, slurry from the trench, imported clay (from Wilkin's Trucking), and dry bentonite. S-B mixing and placement was accomplished using excavators and a bulldozer. To thin the S-B mixture, the excavator operator mixed in slurry from the trench. To thicken the mixture, clay and dry bentonite was added.

Once installation of the S-B wall was completed, a protective cap was installed to minimize the potential for wall desiccation. The cap consisted of a minimum of 5 feet of relatively clean site soil (removed and segregated during the installation procedure) placed above the S-B wall in lifts and compacted with a roller. Permanent crossings, constructed of steel plates and traffic cones, were also installed at two locations atop the S-B wall to provide a stable surface for vehicles

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crossing the wall and to prevent wall damage from vehicle traffic. In an effort to direct vehicular traffic to these crossings, an approximately 2-foot-high soil berm was also constructed along the centerline of the entire S-B wall perimeter with metal fence stakes placed every one hundred feet.

2.3.3.3 Quality Control

The slurry trench specialist from Geo-Solutions performed the QC duties including collecting samples for on- and off-site testing; performing onsite testing with field laboratory equipment; performing trench soundings; and recording all field testing and sounding results.

QC testing was performed on the initial bentonite slurry (i.e., batched mixture in the slurry pond), in-trench bentonite slurry, and S-B backfill mixtures. Tests were performed both prior to and throughout construction. The properties tested, frequencies, specification requirements, and standard test methods for materials tested on- and off-site are presented in Tables 2-1 and 2-2, respectively. Off-site testing was performed at Sierra Testing Labs in El Dorado Hills, California.

Samples for testing of the S-B backfill listed in Tables 2-1 and 2-2 were collected from the mixing area prior to backfilling via grab sampling. To further ensure construction quality, DEQ/E & E also required that in-situ samples of the constructed S-B wall be collected and analyzed for performance verification purposes. Following modification to the specified sample collection method (California Modified Split Spoon; see Section 2.4), samples were successfully retrieved at the required frequency and intervals. The specified frequency was every 500 linear feet of installed wall, collected 5 to 10 days after completion and prior to installation of the protective cap. The engineer selected the boring locations. Continuous coring was performed for the entire depth of the S-B wall. Three samples were collected from each boring: one from the upper, middle, and lower portions of the wall. After sample collection was completed, the boreholes were tremie grouted with bentonite slurry having twice the amount of bentonite used in the slurry trench mix. The samples were analyzed off-site at Sierra Testing Labs for the following parameters: grain size analysis (ASTM D422); Atterberg Limits (ASTM D4318); moisture content and density (ASTM D2937); and permeability (ASTM D5084/D5856).

Tables provided by Sierra Testing Labs which summarize the off-site S-B backfill testing results are included in Appendix B. Separate tables are provided for S-B backfill grab samples and in-situ (i.e., performance verification) samples. The most critical parameter for S-B wall performance is permeability. As shown in the tables, all permeability values meet the specified requirement of less than 1×10^{-7} cm/sec. The maximum value reported was 9.66×10^{-8} cm/sec for a grab sample collected on 4/28/03 near STA 14+40.

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2.3.4 Site Restoration and Demobilization

Following construction completion of the barrier wall, Remtech performed the following restoration and demobilization activities:

- Decontaminated and demobilized construction equipment;
- Demobilized field office and other temporary facilities;
- Restored access to well vaults at MW-21s and EW-Es (damaged during construction);
- Abandoned and reinstalled monitoring wells EW-14s and EW-16s (damaged during construction);
- Repaired surface completion at MW-Ks (damaged during construction);
- Replaced survey monument at N 705213.494, E 7627612.540 (damaged during construction);
- Repaired/replaced perimeter fencing that was removed and/or damaged during construction;
- Separated large woody debris from brush debris and consolidated debris piles;
- Filled/leveled significant ruts and other depressions created from construction activities;
- Removed soil piles by spreading and/or filling depressions;
- Collected temporary fencing sections (DEQ-owned) and stockpiled near the support area;
- Removed silt fencing, bio-bags, and other construction debris along the shoreline. Bio-bags were stockpiled on site and covered with plastic sheeting;
- Covered straw bales with plastic sheeting;
- Cleaned decontamination pad; and
- Cleared site of waste materials, rubbish, and debris (disposed off site).

In addition, approximately three months following wall construction, the disturbed areas of the site were hydroseeded by Northwest Hydromulchers, Inc., under subcontract to E & E. The approximate area seeded included 21 acres of flat, upland area and 1.5 acres on the riverbank slope (note, see Table 2-3 for additional restoration work performed on the slope). The seed mix used on the flat, upland area was an Oregon Department of Transportation (ODOT) Multipurpose mix applied at a rate of 200 pounds per acre; and the mix for the sloped area was Streambank Plus™ mix (native grass mix obtained from Sunmark Seeds International of Troutdale, Oregon, designed to provide increased erosion protection) applied at a rate of 35 pounds per acre.

2.4 Problems Encountered, Corrective Actions, and Project Deviations

Project activities were modified in response to unexpected conditions, requests for additional work, and adjustments to the site work directed by DEQ and E & E.

Table 2-3 describes modifications to the project, rationale/corrective actions, and results.

2.5 Construction Oversight and Monitoring Activities

2.5.1 Construction Oversight

E & E prepared a CQAP (E & E 2003a) to be used in the field by E & E oversight personnel to ensure that construction and implementation of the RA was performed in accordance with contract requirements. The CQAP was developed using the EPA's *Remedial Design/Remedial Action Handbook* (EPA 1995) as a guidance document. Oversight activities performed by E & E included:

- Observing and recording contractor performance for compliance with the project plans and design documents;
- Project documentation including photo-documentation of construction activities, maintaining field logbooks, and completion of daily progress reports (see Section 2.8);
- Implementation of E & E's PCP and BMRP (see Section 2.5.2.1); and
- All other general construction management activities requested by DEQ (e.g., invoice review, assistance with change order development, etc.).

2.5.2 Monitoring Activities

2.5.2.1 Biological and Pollution Control Monitoring

Biological and pollution control monitoring was initiated to ensure that measures prescribed within the NOAA Fisheries *Biological Opinion* (BIOP) were fulfilled. Prior to construction, E & E prepared a *Biological Monitoring and Reporting Plan* (BMRP) and a *Pollution Control Plan* (PCP). These plans outlined the monitoring, documentation, and reporting procedures to be followed by oversight personnel to ensure measures presented in the BIOP were implemented.

E & E utilized a full-time, on-site biological monitor when construction activities were performed within 100 feet of the Willamette River Shoreline. During construction, the contractor's procedures were monitored for compliance with the applicable Best Management Practices (BMPs). The following BMPs were monitored on a daily basis as necessary (including installation and maintenance activities where applicable): silt fencing and bio-bags; boom (defensive boom along the river); mobile fueling activities; dust control; and preservation of existing vegetation. BMP inspections were recorded on the Daily Biological Monitoring Report Forms and/or the Erosion and Sediment Transport Control Measures Inspection Forms. Additional observations relative to BMPs were noted by the oversight engineers in the daily construction oversight reports and logbooks.

Results of the monitoring activities are presented in the *Biological Monitoring Report* (E & E 2003b), submitted to NOAA Fisheries on October 31, 2003. Prior

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to construction, E & E performed a baseline biological survey to document the existing preconstruction vegetation at site. The *Biological Monitoring Report* compares biological conditions observed during and after construction to the baseline conditions to evaluate/identify any impact. No significant impacts were reported. The report also contains discussions on BMP monitoring, river stage monitoring, and rare and endangered species observations made during the RA and includes copies of the Daily Biological Monitoring Forms, Erosion and Sediment Control Inspection Forms, and Photo-Documentation. A copy of the *Biological Monitoring Report* is included in Appendix C.

2.5.2.2 Sewerline Monitoring

Two City of Portland high-pressure sewer lines run parallel to the barrier wall alignment along the north end of the site. These ductile iron pipelines, with diameters of 20-inches and 30-inches, are a distance of approximately 50 feet from the S-B wall alignment. Due to concern about the potential for construction-induced ground movement possibly affecting the pipelines, the City of Portland requested that ground movement monitoring devices be installed and monitored during construction activities along the pipelines.

Per Contract Specification Section 02310, Remtech was required to install sewer line monitoring devices constructed of steel piping secured to the sewer lines by circular strapping. Remtech, however, voiced concern that excavation around the lines to install the monitoring devices may compromise the integrity of the lines and pose undue liability. As such, DEQ waived the contractual requirement for Remtech to install these devices; and, instead, elected to monitor movement of the lines by less intrusive means using slope inclinometers with attached Sondex settlement monitoring rings. This contractual change was addressed under Change Order 4 (see Section 2.4).

Three monitoring devices were installed by E & E's subcontractor, Geotech Explorations, with oversight performed by E & E and subcontractor PacRim Geotechnical (PacRim). Each device consisted of a slope inclinometer casing with attached Sondex settlement monitoring rings. The instruments allowed for the measurement of both lateral and vertical ground movement during S-B wall installation. The approximate station locations and distances from the slurry trench centerline were as follows:

- Instrument I-1: STA 15+80, approximately 20 ft. from the centerline of the trench
- Instrument I-2: STA 15+80, approximately 44 ft. from the centerline of the trench
- Instrument I-3: STA 18+00, approximately 49 ft. from the centerline of the trench



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The instruments were installed using mud rotary techniques. Instruments I-2 and I-3 were installed to a depth of 60 feet. Instrument I-1 was installed to a depth of 80 feet. Three sets of initial readings were taken prior to excavation activities in the area. E & E personnel took readings from I-1 on a daily basis until the trench was backfilled to full-depth to approximately STA 18+50 (beyond the monitoring instruments). Readings from I-2 and I-3 were taken every other day starting when the trench excavation reached 30 feet below ground surface and until the wall was completed to STA 18+50. A final memorandum prepared by PacRim summarizing the monitoring results is presented in Appendix D. Based on review of all monitoring data, PacRim reported that lateral and vertical ground movements were negligible for all three instruments.

2.5.2.3 Archaeological Monitoring

As prescribed by the *Archaeological Monitoring Protocol* (EPA/DEQ 2003; see Appendix E), a professional archeologist from Archaeological Investigations Northwest (AINW) was on site while excavation/ground disturbing activities were conducted within the "archaeological sensitivity area". The "archaeological sensitivity area" extended from approximately STA 18+00 to STA 36+50, as determined in the cultural resource survey completed in September 2002. AINW, under contract with DEQ, monitored excavations for potential artifacts of Native American origin including human remains, funerary objects, and other cultural items. Tribal representatives were also informed and invited to access the site to monitor excavation activities (see Section 2.7.2). No archaeological artifacts were encountered during construction. An *Archaeological Monitoring Report* (AINW 2003), which documents the results of the archaeological monitoring, is also included in Appendix E.

2.6 Health and Safety

E & E site personnel in conjunction with the construction contractor's personnel were responsible for providing guidance and inspection to ensure proper health and safety procedures were followed at the site during construction activities. All contractors and consultants performing work on the site developed and implemented their own site safety plans in accordance with the provisions of the Occupational Safety and Health Administration (OSHA) Standards (29 CFR 1910) and General Construction Standards (29 CFR 1926), including OSHA Hazardous Waste Operations and Emergency Response, Interim Final Rule (29 CFR 1910.120). Compliance with all other applicable federal, state, and local laws and regulations was also required.

A formal safety meeting was held at the beginning of the project to review safety procedures with all site personnel and inform workers of potential hazards. Daily safety meetings to discuss physical and chemical hazards associated with the day's activities were conducted each morning before work began. Site safety briefings

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were also conducted for all new personnel reporting to the site and for all visitors to the site.

Protective clothing, such as a hard hat, steel-toed boots, safety vests, and safety glasses, was required for entry into the site's work zones (exclusion zone). The primary physical hazards at the site included heavy equipment operation; trench excavation; noise; slips; trips; and falls. During slurry trench excavation activities through highly contaminated areas (e.g., FWDA), there was a potential for contact with contaminated soil and/or groundwater. The major concern was dermal contact and/or ingestion of the contaminated matter and inhalation of vapors and/or contaminated particulates (i.e., dust). Air quality monitoring was performed by the Remtech throughout the RA. On several occasions, workers donned air-purifying respirators (APRs) for respiratory protection when airborne contaminant concentrations exceeded action levels. During dry conditions, Remtech controlled dust by water application with a water truck to help prevent on-site personnel and the public from being exposed to airborne contamination.

Overall, work was conducted safely at the site during the RA. Only one minor injury was reported during the RA implementation.

2.7 Community Relations

During project planning, the McCormick & Baxter site was identified as a potentially archaeological sensitive area. The site is also situated in close proximity to a residential neighborhood and receives substantial public and media attention because of its listing on the National Priorities List (NPL). The following sections describe activities employed by DEQ to maintain a proactive approach to community relations prior to and during construction of the barrier wall.

2.7.1 Public Outreach and Town Meetings

Prior to construction, DEQ representatives attended public meetings and distributed Fact Sheets to the local community (e.g., neighborhood associations). DEQ and the community were able to exchange information/concerns and answer questions. This approach enabled construction to proceed with support of the local community and avoid conflicts that could potentially slow or stop construction. Copies of the Fact Sheets are included in Appendix F.

To appease nearby residents, the contract specifications required that work hours be restricted from 7 AM to 6 PM, Monday through Friday. Furthermore, sheet pile driving could not commence until after 8 AM. This alleviated noise impacts during sensitive times when most residents were home. These work hours were strictly enforced and adhered to by site personnel.



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2.7.2 Cultural Resources and Interested Tribal Governments

As presented in the *Archaeological Monitoring Protocol* (EPA/DEQ 2003), the following six tribal governments were identified as having an interest in the cultural resource work at the site:

- Confederated Tribes of the Grand Ronde Community of Oregon;
- Confederated Tribes of Siletz Indians of Oregon;
- Confederated Tribes of the Warm Springs Reservation of Oregon;
- Confederated Tribes of the Umatilla Indian Reservation;
- Confederated Tribes and Bands of the Yakama Indian Nation; and
- The Nez Perce Tribe.

The six tribal governments were notified prior to ground disturbing construction activities. Additionally, tribal members were invited to provide monitors during construction activities to survey excavations for potential historic properties, human remains, funerary objects, and other cultural items (see Section 2.5.2.3). One tribe, the Confederated Tribes of the Grand Ronde Community of Oregon, desired to perform a ceremony prior to commencement of construction activities. DEQ coordinated between the tribe and site personnel to stop all site activities for the ceremony. On April 9, 2003, members from the Grand Ronde Community performed a brief, private ceremony on site during the construction crew's lunch break. No other tribal involvement occurred during construction.

2.7.3 Media and Site Tours

As previously stated, the McCormick & Baxter site is a high profile site due to its listing on the NPL. As such, increased media exposure during this project was anticipated.

Prior to construction, site workers were instructed to not engage the media, but to direct all questions to DEQ's Public Information Officer. Additionally, all site access for media personnel was restricted unless approved by the DEQ.

Various site tours were conducted by DEQ or E & E for either the media or other interested parties (e.g., EPA, NOAA, DEQ). On May 6, 2003, DEQ and E & E conducted a media event to allow local media and other interested parties to obtain first-hand information and pictures of the barrier wall construction. DEQ invited the visitors aboard a chartered tour boat to enable them to view the site from the water. Members of the tour were also allowed to disembark (from the beach near the northwest side of the site) and approach to within a few feet of the construction/exclusion zone for close-up photo opportunities. Local news channels broadcast stories about the project that evening.

2.8 Documentation

2.8.1 Oversight Documentation

E & E oversight engineers completed construction reports on a daily basis. Copies of the *Daily Field Reports* are included as Appendix G. Items recorded on each report included weather conditions; on-site personnel; site visitors; major equipment used; materials delivered to the site; non-conformances noted; safety concerns noted; Willamette River conditions; work completed; and miscellaneous notes and issues. Biological monitoring and pollution control inspection forms were also completed daily by E & E oversight personnel (see Section 2.5.3). E & E engineers also maintained field activity logbooks which included detailed documentation of materials or equipment delivered; records of inspections performed; work progress; planned activities; a photo-documentation log; reports of minor field changes; and field problems. Two 35mm cameras and a digital camera were used for photo-documentation. Both standard prints and compact discs were generated for each roll developed. Select photos are included in Appendix H.

2.8.2 Employee and Visitor Log

An Employee and Visitor Log was maintained by Remtech for the duration of the project. All personnel working at or visiting the site were required to sign the log and provide information including date, name, address, affiliation, purpose for visit, time in, and time out. Copies of the logs were provided to DEQ at project completion.

2.8.3 Weekly Progress Meetings

Each week, Remtech held a weekly progress meeting to discuss project issues including, but not limited to, schedule, installation progress, submittals, problems encountered, and health and safety. Attendees included DEQ's project manager and contract officer; E & E's project manager, project engineer, and oversight engineer; and Remtech's project manager and quality control inspector (QCI). The meetings were conducted by Remtech's project manager. Following each meeting, meeting minutes were developed by Remtech's QCI and submitted to DEQ and E & E for review and comment. Comments, if any, were developed by E & E and submitted to Remtech for inclusion with the original minutes. After each meeting, E & E also prepared a Summary of Action Items, which identified tasks to be completed by each party, as discussed in the progress meeting.

2.8.4 Record Drawings

After barrier wall installation was completed, the DEA survey crew performed surveying to document the as-built locations and elevations of the newly installed wall. Other site features were also surveyed including subsurface utilities crossed (e.g., water lines); significantly regraded areas (i.e., the bank); relocated/repared fencing; reinstalled monitoring wells; permanent road crossings; and onsite disposal cells. Following surveying, DEA developed record drawings showing



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the as-built plan and profile of the barrier wall and the locations of all other site features installed or modified. A copy of the Record Drawings is included as Appendix I. An aerial photograph showing the approximate location of the as-built wall (post-construction) is included as Figure 2-3.

2.9 Barrier Wall Performance Monitoring

Water level monitoring will be the main indicator of whether the wall is meeting the performance goals of the RA. Between September 3 and September 18, 2003, a total of 45 new performance monitoring wells were installed at several locations to monitor groundwater gradients inside and outside the barrier wall. E & E subcontracted Geotech Explorations to install the wells. The monitoring wells were installed as a series of well "nests" inside and outside the barrier wall at approximately 300-foot to 400-foot spacing. Each nest includes a shallow, intermediate, and deep monitoring well. Monitoring water levels at the three depth intervals will allow for estimation of vertical and horizontal flow/gradients around and beneath the wall. The Record Drawings in Appendix I show the locations of each performance monitoring well installed.

All of the wells were installed along the riverfront portion of the site using a track-mounted, hollow-stem auger drill rig utilizing mud-rotary drilling techniques. The well screens for each well cluster were set at similar elevations and consisted of the following:

- The shallow monitoring wells were screened between approximately 7 feet BGS to 22 feet BGS to evaluate groundwater conditions in the upper portion of the aquifer.
- The intermediate monitoring wells were screened between approximately 40 feet BGS to 45 feet BGS to evaluate groundwater conditions in the intermediate portion of the aquifer. The intermediate monitoring wells were constructed similar to the shallow wells, except that the well screen length was shortened to 5-foot sections; and
- The deeper monitoring wells were screened between 75 feet BGS to 80 feet BGS to evaluate groundwater conditions beneath the vertical barrier wall. Similar to the intermediate wells, the deeper wells were equipped with 5-foot well screens.

Shallow monitoring wells (MW-46 through MW-57) were installed using a Geoprobe drill rig. Wells were constructed using 15 feet to 20 feet of 2-inch polyvinyl chloride (PVC) pre-packed well screen with 2-inch flush-threaded PVC riser pipe. All shallow wells were completed so that the well screen straddles the water column during most of the year.

All wells were allowed to stabilize for twenty-four hours prior to development. The wells were developed using a combination of surging, bailing, and pumping techniques to achieve maximum hydraulic connection. The installed wells were developed until the water is clear and sediment free.

2.10 Chronology of Major Events

Following is a list of major events that occurred during the RA:

- **12/03/02** - Contract awarded to Remtech.
- **1/07/03** - Notice to proceed issued to Remtech.
- **3/24/03** - Remtech performed preliminary mobilization for the assembly of the crane and excavator (as described in Change Order 1).
- **3/31/03** - Remtech mobilized crews and equipment to the site. E & E oversight personnel also mobilized to the site.
- **4/01/03** - Remtech began construction of slurry pond. Containment boom installed in Willamette River.
- **4/02/03** - E & E installed the river stage gauge to monitor river elevation during construction.
- **4/03/03** - Remtech initiated bentonite slurry mixing.
- **4/08/03** - Remtech began excavation of the S-B wall lead-in trench at STA 1+00. Buried wood chip/debris encountered. E & E conducted site safety briefing for archeology crew and DEQ personnel.
- **4/09/03** - Excavation of the S-B wall began at STA 36+68.
- **4/10/03** - Sheet pile installation began at STA 2+50. Train is parked across RR crossing, blocking safe egress to the site. E & E reported incident to railroads and Police.
- **4/14/03** - Remtech's drilling subcontractor began monitoring well abandonment. Slurry level in the trench dropped significantly over the weekend.
- **4/15/03** - E & E and ADT exposed the pressurized sewer lines in multiple locations.



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- **4/16/03** - S-B wall trenching operation reached the bottom elevation transition point at STA 36+48.
- **4/17/03** - E &E, PacRim, and Geotechnical Explorations began installing inclinometers.
- **4/21/03** - Field Order #1 was issued to realign the S-B wall in an effort to protect the inclinometers.
- **4/22/03** - E & E begins recording inclinometer readings to monitor for earth movement near the pressurized sewer lines.
- **4/24/03** - Sheet pile driving refusals of 60-foot long sheets encountered near STA 3+10 and 4+45.
- **4/28/03** - Discovery and notification of a dead wild chinook (an ESA protected species).
- **4/29/03** - Remtech cut a notch in the bulkhead/retaining wall to allow for sheet pile installation. The cut caused structural instability in approximately 45-feet of the upper portion of the wall. Realignment of the sheet pile wall proposed to avoid buried tie-backs expected throughout the bulkhead/retaining wall.
- **5/6/03** - Multiple refusals encountered during sheet pile driving. Refusals were varied lengths, and hard driving was noted on all 80-foot sheets. Occasionally, the sheet piles were heating up, fatiguing, and failing around the jaws of the hammer.
- **5/14/03** - Dan Brookshire, Remtech's welder and sheet pile installation crewmember, is sent to medical clinic due to an enflamed eye.
- **5/19/03** - E & E personnel used the on-site response boat to assist a fisherman who fell out of his boat as he was attempting to tie up to a dolphin.
- **5/20/03** - E & E assists DEQ with two site tours for DEQ personnel. Wood chips encountered during S-B wall excavation at approximately STA 27+00. The lens appears to be 12 to 14 feet thick and begins at 6 to 8 feet BGS.
- **5/21/03** - Remtech (with E & E oversight) performed the additional task of potholing the interceptor trench.

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- **5/27/03** - Buried wood chips are no longer present in the trench excavation at STA 30+50. A dead wild steelhead was found, and the proper notifications were made.
- **5/28/03** - Buried wood chips were encountered again at STA 33+00. High tides combined with spring runoff (Bonneville Dam releasing large volumes) were causing damage to the shoreline erosion control measures.
- **5/30/03** - Geotechnical Explorations (with oversight from an E & E geologist) performed exploratory borings near refusals in the bulkhead area in an attempt to ascertain the reason.
- **6/02/03** - Exploratory drilling operation tagged the Troutdale formation at approximately 165 feet BGS.
- **6/03/03** - Protective cap construction initiated between STA 17+00 and STA. 19+50. The exploratory drilling in the bulkhead region is completed and no definite reason for the refusals was found.
- **6/09/03** - After an incident where the hammer slipped off a sheet pile causing the crane to severely rock back and forth, a member of Remtech's crew noticed that a cable was severely frayed.
- **6/12/03** - The S-B wall was completed.
- **6/12/03** - The crane damaged on 6/09/03 was operating again. Refusals encountered near tie-in to S-B wall at approximately STA 15+00.
- **6/16/03** - Sheet pile installation continued today under a change order condition. Remtech attempted to bypass a refusal area near tie-in (Alternative #1). NOAA, EPA, and DEQ observed sheen NAPL globules rising from the river bottom that create sheen on the river surface. The sheen was approximately 50 yards southeast of the end of the bulkhead.
- **6/17/03** - Sheet pile installation continued under a change order condition (Change Order 5). Remtech attempted to bypass a refusal area near the tie-in (Alternative #2). Remtech began demobilizing S-B wall specific equipment.
- **6/18/03** - Remtech began clearing the site of project related debris.
- **6/23/03** - Sheet pile installation completed in the area of the tie-in near STA 15+03. Sheet pile installation operations moved to southern end to finish installation from 2+50 to 1+00. The protective cap was also



2. Remedial Action Implementation

completed in this area. Remtech began Change Order 6 (additional T&M tasks).

- **6/26/03** - Normal sheet pile wall installation completed (refusal sheets remaining).
- **6/30/03** - All sheet pile driving operations completed. Remtech began excavation of the interceptor trench.
- **7/01/03** - Remtech began disassembly of the cranes.
- **7/02/03** - Remtech completed the excavation of the interceptor trench (approximately 1500 cubic yards).
- **7/03/03** - Remtech began grading the slope between the bulkhead and monitoring wells 7s and 8i.
- **7/07/03** - Remtech cut refusal sheets (slightly above adjacent sheets) and torch-scribed the tip elevations into the sheets.
- **7/09/03** - The interceptor trench spoils disposal cell was covered and compacted.
- **7/16/03** - Remtech removed treated wood from the beach areas.
- **7/17/03** - Remtech began installation of fiber matting for erosion control/slope stabilization.
- **7/22/03** - Remtech began construction of perimeter berm atop the S-B wall. Surveyors performed final surveying tasks (fence locations, as-built sheet pile wall, etc.).
- **7/24/03** - The perimeter berm (with fence stakes installed every 100 feet) was completed.
- **7/28/03** - Remtech started general site demobilization. Fence repair/replacement began.
- **7/28/03** - Erosion mat installation completed.
- **7/31/03** - Final site walk was performed by DEQ and E & E. The construction was deemed substantially complete.
- **8/04/03** - Fence repair/replacement completed.

2. Remedial Action Implementation

- **8/12/03** – Remtech demobilization completed.
- **9/3/03 to 9/18/03** – Barrier wall performance monitoring wells installed by Geotech Explorations.
- **11/17/03 to 11/21/03** - Site hydroseeded by Northwest Hydromulchers.

2.11 Unresolved Issues

As described in Table 2-3 (Section 2.4) two areas of difficult driving (refusal areas) were encountered during sheet pile installation. One area was encountered near the bulkhead/wood retaining wall region (STA 8+00 to 9+00) and another at the north end tie-in into the S-B wall (near STA 15+00) in the FWDA. Despite significant efforts to drive the sheets to design grade, a total of six sheets met with refusal prior to design depth (three in the bulkhead area and three in the FWDA). As shown in the Record Drawings (Appendix I), the penetration depths of these refusal sheets varied from approximately -28 feet National Geodetic Vertical Datum (NGVD) to -42 feet NGVD (18 to 5 feet from design depth, respectively).

The six refusal sheets are marked with the bottom elevation of the sheet (in NGVD) torch-cut into the sheet's top end. The tops of all the sheets, except those in ground elevation transition areas, were left with approximately 2 feet of stickup above the ground surface.

E & E recommends that the refusal areas (windows) in the sheet pile barrier wall be patched using a pressure grouting technique. Pressure grouting is the in-situ creation of cemented soil geometries (soilcrete). The cost and effectiveness is highly dependant on in-situ soil (grain size distribution) encountered and the physical characteristics required (permeability). The recommended grouting consists of installing pressure grout columns, 4-feet in diameter at a minimum, centered on the 1/2 pairs (sheets) that have met with refusal. Cost estimates range from \$75,000 to \$125,000, and the estimated time for implementation is two to three weeks.

3

Project Quantities and Costs

A detailed summary of the RA construction quantities and costs is presented in Table 3-1. The table includes costs associated with barrier wall construction activities performed by Remtech; costs for engineering/consulting services performed by E & E and its subcontractors; AINW archaeological monitoring costs; and DEQ labor costs for the RA.

For the Remtech construction portion, the Table 3-1 segregates contractual (i.e., bid) items from change order items. The total bid cost for all contractual items was \$2,541,187.55, which included \$67,407.10 to be used during periods of standby if construction was stopped by DEQ. This standby amount, however, was never used. The actual cost of all contractual work was \$2,513,271.23. All contractual lump sum quantities and costs did not vary from the bid estimate. However, unit price Items 1d, 2b, and 3c deviated from the bid estimate, as described below:

- Line Item 1d - Well abandonment. Estimated 11 wells (\$6,264.72); Actual 14 wells (\$7,973.28);
- Line Item 2b - Install S-B Wall. Estimated 112,300 sq. ft. (\$552,516.00); Actual 114,611 (\$563,886.12); and,
- Line Item 3c - Install Sheet Pile Wall. Estimated 92,100 sq. ft. (\$263,406.00), actual 101,335 (\$289,818.10).

During the course of construction, six change orders were approved by DEQ (see Section 2.4). The total estimated cost for all change order work was \$194,841.36. Change Order 1 was a credit of \$500. Change Order 2 and Change Order 4 were at no additional cost to the project. Change Order 3 (\$24,000 lump sum) and Change Order 5 (\$20,000 lump sum) increased the contract amount by \$44,000. Change Order 6 was completed on a time and materials (T & M) basis. The estimated total cost for Change Order 6 was \$151,341.36 as compared to the final actual cost of \$113,047.83. The total cost for all change order work was \$156,547.83.

In summary, the combined total estimated Remtech construction cost (contractual and change order) was \$2,736,028.91. The combined total actual construction cost (contractual and change order) was \$2,669,819.06 (or \$66,209.85 less than

the estimated amount). RA engineering and consulting services performed by E & E and its subcontractors totaled \$657,984; and AINW and DEQ labor costs totaled \$30,000 and \$106,742, respectively, resulting in a total RA cost of \$3,464,545.

4

References

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4. References

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& Baxter Creosoting Site, Portland, Oregon.

_____, 1996, *Record of Decision*, prepared for McCormick & Baxter Creosoting
Company, Portland, Oregon.

**Table 2-1
On-Site Testing
McCormick & Baxter Site
Portland, Oregon**

Test	Material	Frequency	Specification Parameter	Standard Method
Slump	S-B backfill	1/100 linear feet of S-B wall placed or at least 1 per day.	4-6 inches	ASTM C143
Viscosity	Bentonite slurry (initial and in-trench)	1 prior to placement and minimum 2 per day.	> 40 sec	API RP 13B
Filtrate Loss	Bentonite slurry (initial)	1 prior to placement and minimum 2 per day.	< 20 cm ³	API RP 13B
Density	Bentonite slurry (initial and in-trench) and S-B backfill	1 prior to placement and minimum 2 per day.	<i>Initial (batch):</i> 1057-1202 kg/m ³ <i>In-trench:</i> 1025-1360 kg/m ³ <i>S-B Backfill:</i> At least 280 kg/m ³ denser than in-trench slurry.	API RP 13B
pH	Bentonite slurry (initial and in-trench)	1 prior to placement and minimum 2 per day.	6.5-10	API RP 13B
Permeability	S-B backfill	Not specified.	< 1 x 10 ⁻⁷ cm/sec	Q-Test*

* Quick Test (Q-Test) is an on-site pressure cell method that does not have a Standard Method and is utilized for batch mixing control.

Key:

S-B = Soil-bentonite.
sec = Second
cm³ = Cubic centimeters.
kg/m³ = Kilograms per cubic meter.

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**Table 2-2
Off-Site Testing
McCormick & Baxter Site
Portland, Oregon**

Test	Material	Frequency	Specification Parameter	Standard Method
Grain Size Analysis	S-B backfill	1/100 linear feet of S-B wall placed or at least 1 per day.	Consistent with design mix	ASTM D422
Permeability	S-B backfill	1/100 linear feet of S-B wall placed or at least 1 per day.	$< 1 \times 10^{-7}$ cm/sec	ASTM D5084 ASTM D5856

Key:

cm/sec = Centimeters per second.
S-B = Soil-bentonite.

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Table 2-3
Combined Sheet Pile and Soil-Bentonite Barrier Wall Construction
Summary of Deviations and Corrective Actions
McCormick & Baxter Site
Portland, Oregon

Deviation/Scope Change	Reason/Corrective Action/Result
<p>Contractor was allowed access to the paved parking area for early mobilization/assembly of the cranes and long-boom excavator</p>	<p>Change Order 1 was issued by DEQ.</p> <p>This change order granted permission for Remtech to access and utilize the paved parking area at the site for the sole purpose of assembling the crane and excavator to be used in performance of the work.</p> <p>Change Order 1 was a no cost change order.</p>
<p>Miscellaneous changes to the contract specifications and key personnel substitution for the slurry wall excavator operator</p>	<p>Change Order 2 was issued by DEQ.</p> <p>The change order was written as follows:</p> <ol style="list-style-type: none"> 1. <i>Change to Specification Section 02260, Table 1. This change relates to the requirement for testing the bentonite slurry for Filter Press properties.</i> <ul style="list-style-type: none"> • <i>Change the criterion for Initial Bentonite Slurry, Line C. to "< 20 cubic cm"</i> • <i>Delete line e, Filtrate Loss under In-Trench Bentonite Slurry</i> 2. <i>Change to Specification Section 02260, Table 1. This change relates to the requirement for testing backfill for Atterberg Limits and Moisture Content.</i> <ul style="list-style-type: none"> • <i>Delete Lines B and C under S-B Backfill Material in Table 1.</i> 3. <i>Change to Specification Section 02260, Part 2.2.E. This change relates to field laboratory equipment to be used for field testing slurry and S-B backfill.</i> <ul style="list-style-type: none"> • <i>Eliminate Items 6, 7, 8, 9, 11, 12, 13, 14 from Part 2.2.E.</i> • <i>Replace Item 10 with "Appropriately scaled, color-coded pH paper."</i> • <i>The standard mud-balance (API RP 13B) may be used to determine density of the S-B backfill.</i> • <i>An off-site laboratory may be used for grain size and permeability (except for the Q-test perms to be run in a filter press cell).</i> 4. <i>Change to Specification Section 02260, Part 3.10. This change relates to performance verification following completion of every 500 feet of S-B wall via continuous core sampling. Add the following paragraph to the end of Part 3.10:</i>

Table 2-3
Combined Sheet Pile and Soil-Bentonite Barrier Wall Construction
Summary of Deviations and Corrective Actions
McCormick & Baxter Site
Portland, Oregon

Deviation/Scope Change	Reason/Corrective Action/Result
	<ul style="list-style-type: none"> • <i>D. In the event that undisturbed core samples are unable to be obtained, resulting in data that are not useful (as determined by the Engineer), the performance acceptance for the S-B wall installation will be based on the tests required by Part 2.4.E. (sampling of S-B mix prior to backfill placement).</i> <p><i>5. Change of Slurry Wall Excavator Operator. Mr. James Beebe is approved for replacement of Mr. Gary Kilpatrick as the Slurry Wall Excavator Operator. In accordance with Section 00500 (the Contract), Paragraph V.D., this change results in a credit of \$500.00 to the NTE Contract price.</i></p> <p><i>6. Change to Specification Sections 01580 Existing Utilities and Subsurface Features (Part 3.C); 02100 Mobilization and Site Preparations (Part 3.4.C); and Detail #5 (Sheet 7 of 8) of the Project Plans. This change relates to the method of temporary utility support for water and gas utility crossings during the installation of the Soil-Bentonite Barrier Wall.</i></p> <ul style="list-style-type: none"> • <i>For gas utility crossings, the Contractor may remove the utility outside the work area after verification that the line is inactive.</i> • <i>For water line crossings, the Contractor may remove the utility from the work area and cap the utility approximately 50' outside the location of the barrier wall crossing. The water line shall be cut and capped in accordance with industry standards (e.g., AWWA) and as required by the utility provider and the Engineer.</i> • <i>All abandoned utilities shall be surveyed and displayed on the final Record Drawings.</i> <p>Change Order 2 resulted in a \$500 credit to DEQ.</p>
<p>Extra effort associated with excessive (more than reasonably estimated) wood debris and slurry loss</p>	<p>Change Order 3 was issued by DEQ.</p> <p>Remtech encountered significant subsurface wood debris and slurry loss in the area of the initial S-B wall trench construction including the southern lead in trench through STA 36+50. DEQ and Remtech agreed that the amount of encountered debris and associated slurry loss significantly exceeded the volumes that were reasonably anticipated based on the contract drawings and specifications.</p> <p>DEQ and Remtech agreed that Remtech was entitled to additional compensation for the unforeseen site conditions.</p> <p>Remtech was compensated by a total lump sum payment of \$24,000 and one additional on-site workday (from 64 to 65).</p>

Table 2-3
Combined Sheet Pile and Soil-Bentonite Barrier Wall Construction
Summary of Deviations and Corrective Actions
McCormick & Baxter Site
Portland, Oregon

Deviation/Scope Change	Reason/Corrective Action/Result
<p>Changes to contract specifications for the use of a different permeability test method and for the deletion of sewer line monitoring by the contractor</p>	<p>Change Order 4 was issued by DEQ. E & E was informed by Remtech's subcontracted laboratory (Sierra Testing Labs) that testing permeability using ASTM Method D5856 (using a rigid wall permeameter) is more appropriate for testing the S-B backfill than using ASTM Method D5084 (using a flexible wall permeameter). Therefore, Change Order 4 was issued allowing permeability testing using ASTM D5856.</p> <p>The change order also waived Remtech's requirement to install sewer line monitoring devices per Section 02310 (see Section 2.5.2.2 of this report for additional details).</p> <p>Change Order 4 was a no-cost change order.</p>
<p>Extra effort required for sheet pile refusals</p>	<p>Change Order 5 was issued by DEQ.</p> <p>The Contractor encountered sheet pile refusals near the sheet pile-to-S-B wall transition at STA 15+03. One sheet (half-pair) of 80-foot-long sheet pile met with refusal near approx. STA 14+88. As of 06/13/03, the sheets were partially installed to approx. STA 15+13, or approx. 2.5 pairs (10 feet) into the S-B wall transition. In an effort to make a fully penetrating transition to the required design depth, Contractor was directed to reattempt installation of the sheet pile-to-S-B wall transition using an alternate sheet pile alignment. To get to the realignment turn point, the Contractor pulled 7 sheet pile pairs (including the refusal sheet and one pair beyond) to establish a revised alignment turn point at approx. STA 14+84. Thereafter, the Contractor attempted reinstallation of sheet piles along the revised route on 6/16/03, 6/17/03, 6/18/03, and 6/19/03. Accordingly, the DEQ and Remtech agreed that Remtech was entitled to the following compensation for performance of this realignment work:</p> <ol style="list-style-type: none"> 1. As full and complete compensation for sheet pile installation and removal activities performed by Remtech through 6/13/03 past the new turn point at approx. STA 14.84, Remtech was compensated for installation of seven pairs of sheet piles to design depth per design plan to approx. STA 15+13 as part of the original Contract at the Contract unit rate (\$2.86/square foot x 2,320 SF). 2. As full and complete compensation for all sheet pile activities performed on 6/16/03, 6/17/03, 6/18/03, and 6/19/03, related to the attempted realignment of the sheet pile wall, Remtech was paid the fixed sum of \$20,000. <p>In addition to the compensation above, the number of on-site working days specified in Attachment A to the Contract shall be increased from 65 (per Change Order No. 3) to 69.</p>

Table 2-3
Combined Sheet Pile and Soil-Bentonite Barrier Wall Construction
Summary of Deviations and Corrective Actions
McCormick & Baxter Site
Portland, Oregon

Deviation/Scope Change	Reason/Corrective Action/Result
<p>Remtech was requested to complete additional work items</p>	<p>Change Order 6 was issued by DEQ and included the following 7 tasks:</p> <ol style="list-style-type: none"> 1. <u>Bank Regrade:</u> Grading of the riverbank slope at approximately 2:1 shoreward of the installed sheet pile between the following locations: From approx. STA 1+50 to STA 7+00 and from approx. STA 9+00 to STA 14+50. A topographic survey of the regraded areas was also performed (included on Record Drawings). 2. <u>Bulkhead Removal and Regrade:</u> Grading of the slope between sheet pile wall and wooden bulkhead at approximately 2.5:1; removal of damaged tops of bulkhead pilings and cribbing; removal of remnant bulkhead structure east of sheet pile wall; and disposal of wood debris per Item 6, below. A topographic survey of the regraded areas was also performed (included on Record Drawings). 3. <u>Erosion Control Blanket Installation:</u> Installation of Permea Tex Coir 700 geotextile fabric along regrade areas identified in Items 1 and 2, above. 4. <u>Shoreline Creosote Timber Removal:</u> Removal of creosote-treated timbers (marked by E & E) that lay on the beach surface along the shoreline. Debris was disposed of per Item 6, below. 5. <u>Wood Chips Stockpile Removal:</u> Removal of wood chips stockpile (generated during slurry wall excavation at the south end) by spreading chips at areas designated by the engineer. 6. <u>On-Site Debris Disposal:</u> Excavation of a disposal cell northwest of the existing buried concrete debris area. Disposal of the following debris items plus a minimum of 2 feet of soil cover: abandoned monitoring well debris; abandoned inclinometer debris; removed 2" and 4" outfall piping; removed water piping; unusable fence posts; oversized debris from wood chips stockpile, per Item 5, above; bulkhead debris per Item 2, above; and shoreline creosote timbers per Item 4, above. Following debris disposal and soil cover placement, the disposal cell area was compacted and the cell limits were surveyed (included on Record Drawings).

Table 2-3
Combined Sheet Pile and Soil-Bentonite Barrier Wall Construction
Summary of Deviations and Corrective Actions
McCormick & Baxter Site
Portland, Oregon

Deviation/Scope Change	Reason/Corrective Action/Result
	<p>7. <u>Interceptor Trench Excavation and Disposal:</u> Excavation of approximately 1,500 cubic yards of contaminated interceptor trench drain rock and removal of perforated collection piping between the sheet pile wall and adjacent wood pilings between approx. STA 7+00 to STA 5+75. The trench was excavated to depths of approx. 15 feet BGS or until the drain rock material was removed. The trench spoils were disposed of on site in an upland disposal cell constructed within the barrier wall and covered with 4 feet of compacted clean soil to existing grade. The disposal cell extents were surveyed (included on Record drawings).</p> <p>An estimated not-to-exceed cost of \$151,341.36 (based on time and materials) was specified for Change Order 6. The actual cost for completion of this work was \$113,047.83.</p>
<p>S-B wall alignment change to allow room for inclinometers</p>	<p>Field Order 1 was issued by E & E, as described below:</p> <p>The inclinometer near STA 15+75 was installed approximately 17 feet from the centerline of the S-B wall, vs. the 20 feet desired. The installation crew used offset staking information from STA 16+00. The wall alignment originally bowed northward in this area between stations, and, therefore, the stake was inadvertently placed closer than planned. To appease all parties involved and in an effort to protect the inclinometer, E & E directed Remtech to straighten the wall alignment between STA 15+03.34 to STA 17+01.34. The resulting barrier wall installation was approximately 2.5 feet farther away from the inclinometer, and the overall barrier wall length was decreased by 0.31 feet.</p>

Table 2-3
Combined Sheet Pile and Soil-Bentonite Barrier Wall Construction
Summary of Deviations and Corrective Actions
McCormick & Baxter Site
Portland, Oregon

Deviation/Scope Change	Reason/Corrective Action/Result
<p>Sheet pile wall alignment change to avoid buried obstructions through the bulkhead area</p>	<p>Field Order 2 was issued by E & E, as described below:</p> <p>During exploratory excavations near plan STA 8+00, Remtech encountered several large buried wood tiebacks that presumably were used to anchor the adjacent wood retaining wall (bulkhead), which extends northeast to southwest near the river. The tiebacks were estimated to extend laterally into the subsurface approximately 35 feet northwest of the retaining wall. Sheet pile installation in this area would impact the structural integrity of the bulkhead and encounters with tiebacks may cause refusal.</p> <p>In an effort to avoid these tiebacks and to maintain the structural integrity of the retaining wall, the sheet pile wall alignment was changed. To accomplish this, an additional corner point, 6A, was established between plan Points 6 and 7 (per sheet 3 of the design drawings).</p>
<p>Change to the specified sampling procedure for S-B wall performance verification sampling</p>	<p>The contract documents required that performance verification samples be collected via Shelby tube sampling. However, the drilling subcontractor was unable to get the S-B mixture to stay within the Shelby tube as the sample was extracted. Therefore, the sample collection method was modified to a California Modified Split Spoon technique, resulting in successful sample extraction.</p>
<p>Refusals encountered during sheet pile wall installation</p>	<p>Two areas of difficult driving (refusal areas) were encountered during the sheet pile wall installation. One area was encountered near the bulkhead/wood retaining wall region (STA 8+00 to 9+00) and another at the north end tie-in to the S-B wall (near STA 15+00) in the FWDA. Multiple attempts using several different approaches were made to get refusals to plan grade. In an effort to ascertain the cause of the refusal, a drill rig and crew were mobilized to the site. Several borings were performed adjacent to and within 2 feet of the refusal sheets. Borings were advanced to depths well below the wall design depth. No obvious obstruction was encountered. It is hypothesized that the refusals were due to a combination of encountering tight sandy formations and the total surficial friction on the sheets.</p> <p>Despite significant efforts, a total of six sheets met with refusal prior to design penetration depth (three in the bulkhead area and three in the FWDA). The penetration depths of these refusal sheets varied from -28 feet National Geodetic Vertical Datum (NGVD) to -42 feet NGVD (18 to 5 feet from design depth, respectively). During hard driving, the sheets would often fatigue and fail in the vice grips of the vibratory head. The six refusal sheets are marked with the bottom elevation of the sheet (in NGVD) torch-cut into the sheet's top end.</p>

Table 2-3
Combined Sheet Pile and Soil-Bentonite Barrier Wall Construction
Summary of Deviations and Corrective Actions
McCormick & Baxter Site
Portland, Oregon

Deviation/Scope Change	Reason/Corrective Action/Result
	Resolution of the problems, if any, caused by these gaps in the barrier wall at the refusal locations has yet to be determined.

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Table 3-1
Summary of Remedial Action Construction Quantities and Costs
McCormick & Baxter Site, Portland, Oregon

Item	Description	Units	Unit Price	Estimated (Bid) Quantity	Actual Quantity	Bid Amount	Actual Amount (Final Cost)
REMTECH CONSTRUCTION COSTS:							
1. General							
1a.	Mobilization/Demobilization, General	Lump Sum	\$210,748.00	Job	Job	\$210,748.00	\$210,748.00
1b.	Construction Operations Plan, Contractor Quality Control Plan, Contractor Site Safety Plan, and All Other Submittals	Lump Sum	\$49,201.76	Job	Job	\$49,201.76	\$49,201.76
1c.	Surveying	Lump Sum	\$13,047.06	Job	Job	\$13,047.06	\$13,047.06
1d.	Well Abandonment	Wells	\$569.52	11	14	\$6,264.72	\$7,973.28
2. Soil-Bentonite Slurry Wall							
2a.	Mobilization/Demobilization, S-B Wall	Lump Sum	\$66,470.59	Job	Job	\$66,470.59	\$66,470.59
2b.	Install S-B Wall	Square Feet	\$4.92	112,300	114,611	\$552,516.00	\$563,886.12
2c.	S-B Wall Standby Time, periods less than an eight-hour working day	Working Hours	\$595.49	40	0	\$23,819.60	\$0.00
2d.	S-B Wall Standby Time, periods of entire working days	Working Days	\$4,358.75	10	0	\$43,587.50	\$0.00
2e.	Earthwork including Stockpile Maintenance	Lump Sum	\$90,843.65	Job	Job	\$90,843.65	\$90,843.65
3. Steel Sheet Pile							
3a.	Mobilization/Demobilization, Sheet Pile Wall	Lump Sum	\$70,514.67	Job	Job	\$70,514.67	\$70,514.67
3b.	Purchase, Deliver, and Store Sheet Pile at the Site	Square Feet	\$11.36	101,300	101,300	\$1,150,768.00	\$1,150,768.00
3c.	Install Sheet Pile Wall	Square Feet	\$2.86	92,100	101,335*	\$263,406.00	\$289,818.10
CONTRACT SUBTOTAL						\$2,541,187.55	\$2,513,271.23
Change Orders							
4	Change Order No. 1	Lump Sum	(\$500.00)	Job	Job	(\$500.00)	(\$500.00)
5	Change Order No. 2 (No-Cost Change Order)	Lump Sum	\$0.00	Job	Job	\$0.00	\$0.00
6	Change Order No. 3	Lump Sum	\$24,000.00	Job	Job	\$24,000.00	\$24,000.00

Table 3-1
Summary of Remedial Action Construction Quantities and Costs
McCormick & Baxter Site, Portland, Oregon

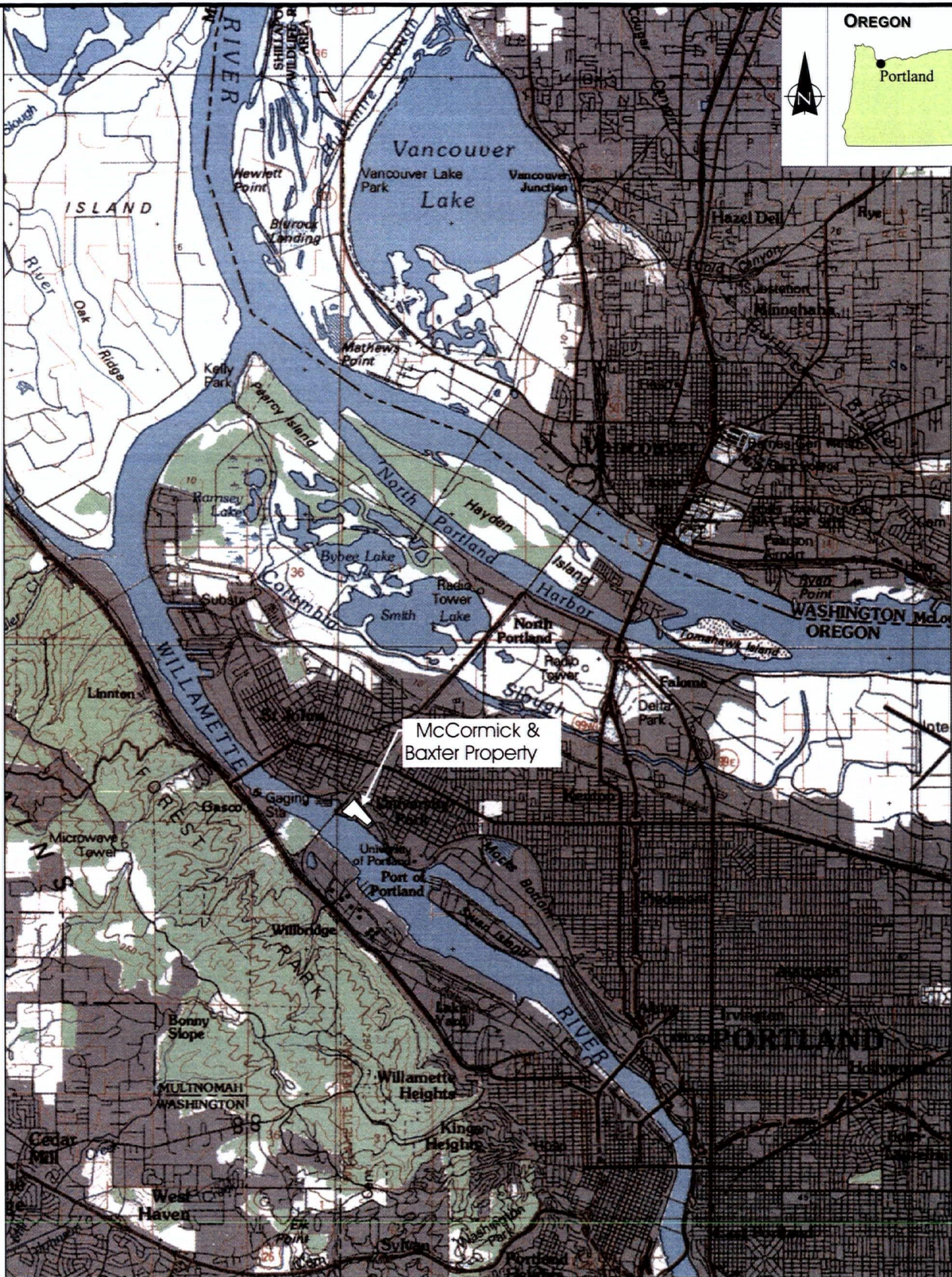
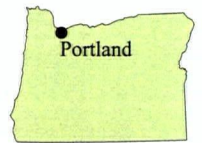
Item	Description	Units	Unit Price	Estimated (Bid) Quantity	Actual Quantity	Bid Amount	Actual Amount (Final Cost)
7	Change Order No. 4 (No-Cost Change Order)	Lump Sum	\$0.00	Job	Job	\$0.00	\$0.00
8	Change Order No. 5	Lump Sum	\$20,000.00	Job	Job	\$20,000.00	\$20,000.00
9	Change Order No. 6	T&M	\$151,341.36	--	--	\$151,341.36	\$113,047.83
CHANGE ORDER SUBTOTAL						\$194,841.36	\$156,547.83
SUBTOTAL REMTECH CONSTRUCTION COSTS:						\$2,736,028.91	\$2,669,819.06
E&E AND E&E's SUBCONTRACTOR COSTS:							
	Contractor Procurement Support (Task 23.1)	--	--	--	--	--	\$18,038
	RA Project Administration (Task 21)	--	--	--	--	--	\$50,000
	RA Site-Specific Plans (e.g., CQAP, PCP, BMRP; Task 22.1)	--	--	--	--	--	\$18,885
	Contractor Management Support (Task 24.1)	--	--	--	--	--	\$54,585
	Resident Inspection Services (Task 25.1)	--	--	--	--	--	\$170,869
	Wall Performance Monitoring** (Task 27.1)	--	--	--	--	--	\$167,021
	Construction Summary Report (Task 29.1)	--	--	--	--	--	\$38,000
E & E's SUBCONTRACTOR COSTS:							
	West Coast Marine Cleaning (under Task 25.1)	--	--	--	--	--	\$11,000
	Pac-Rim Geotechnical (under Task 24.1)	--	--	--	--	--	\$15,000
	Geotech Explorations (inclinometer installation and drilling adjacent to bulkhead; under Task 27.0)	--	--	--	--	--	\$17,000
	Geotech Explorations (performance monitoring well installation; under Task 27.1)	--	--	--	--	--	\$75,000
	Northwest Hydromulchers, Inc. (hydroseeding; under Task 27.0)	--	--	--	--	--	\$36,586
SUBTOTAL E&E AND E&E's SUBCONTRACTOR COSTS:							\$657,984
AINW COSTS:							\$30,000
DEQ COSTS:							\$106,742
TOTAL:							\$3,464,545

* The actual quantity of sheet pile installed was approximately 97,400 square feet. The invoice amount was increased to 101,335 per Change Order 5 for extra efforts performed near STA 15+00 (see Section 2.4).

** Wall Performance Monitoring includes costs for the development of the Wall Performance Monitoring Plan; installation of transducers in performance monitoring wells with associated data collection and reporting; 2003 groundwater/surface water interaction study sampling and reporting; and trailing support on the 2002 groundwater sampling event.

OREGON

Portland



McCormick &
Baxter Property



ecology and environment, inc.
International Specialists in the Environment
Portland, Oregon

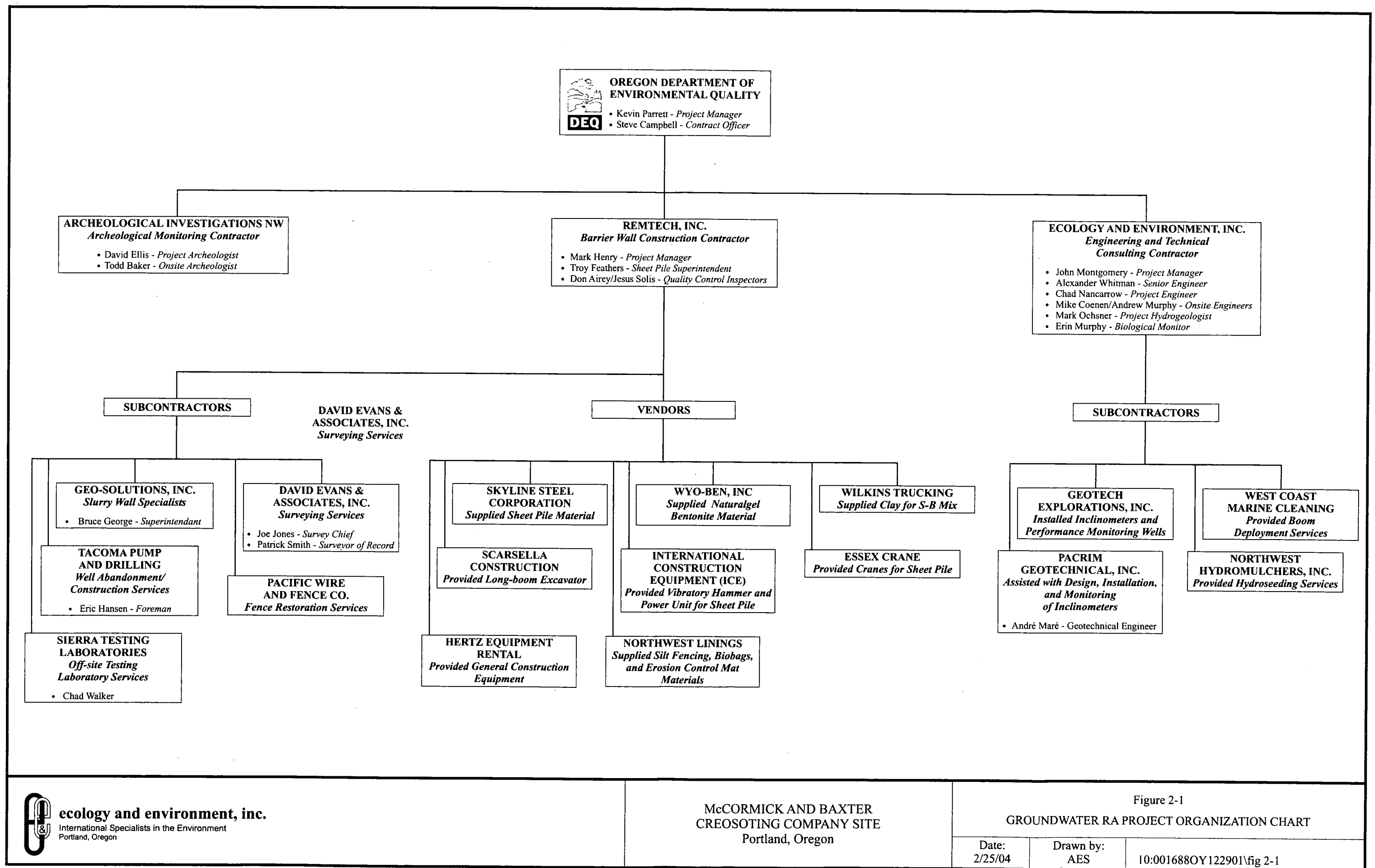
**MCCORMICK AND BAXTER
CREOSOTING COMPANY SITE**
Portland, Oregon

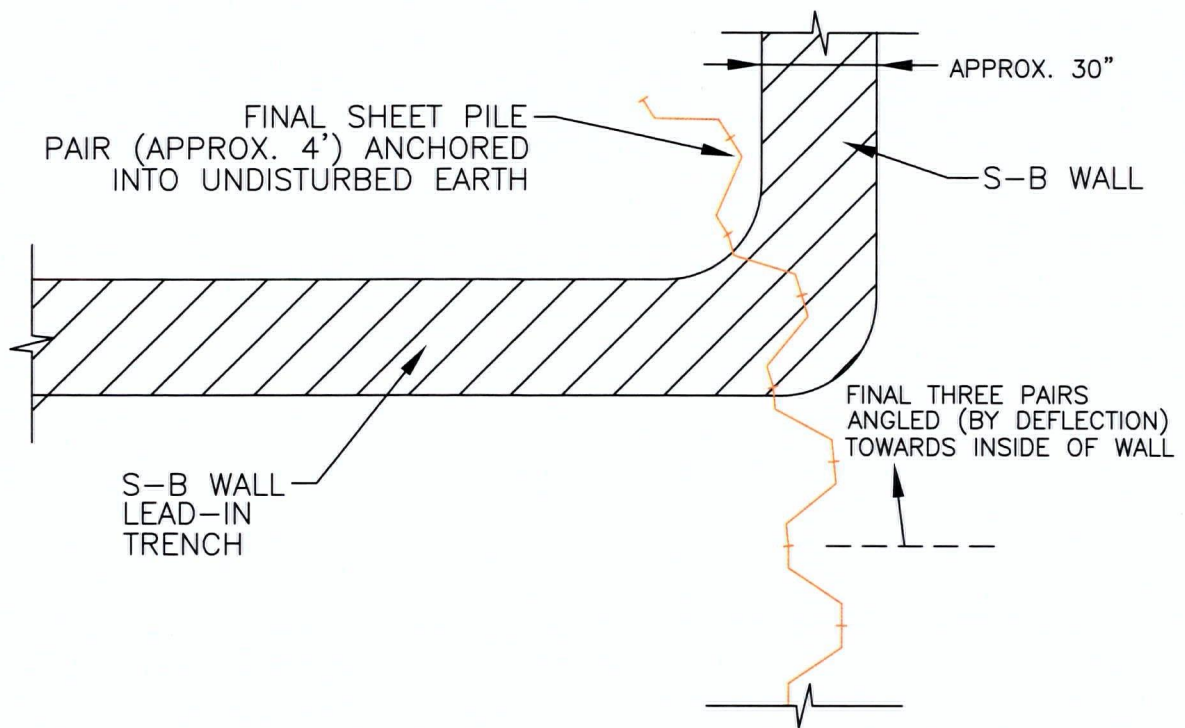
Figure 1-1

SITE LOCATION MAP

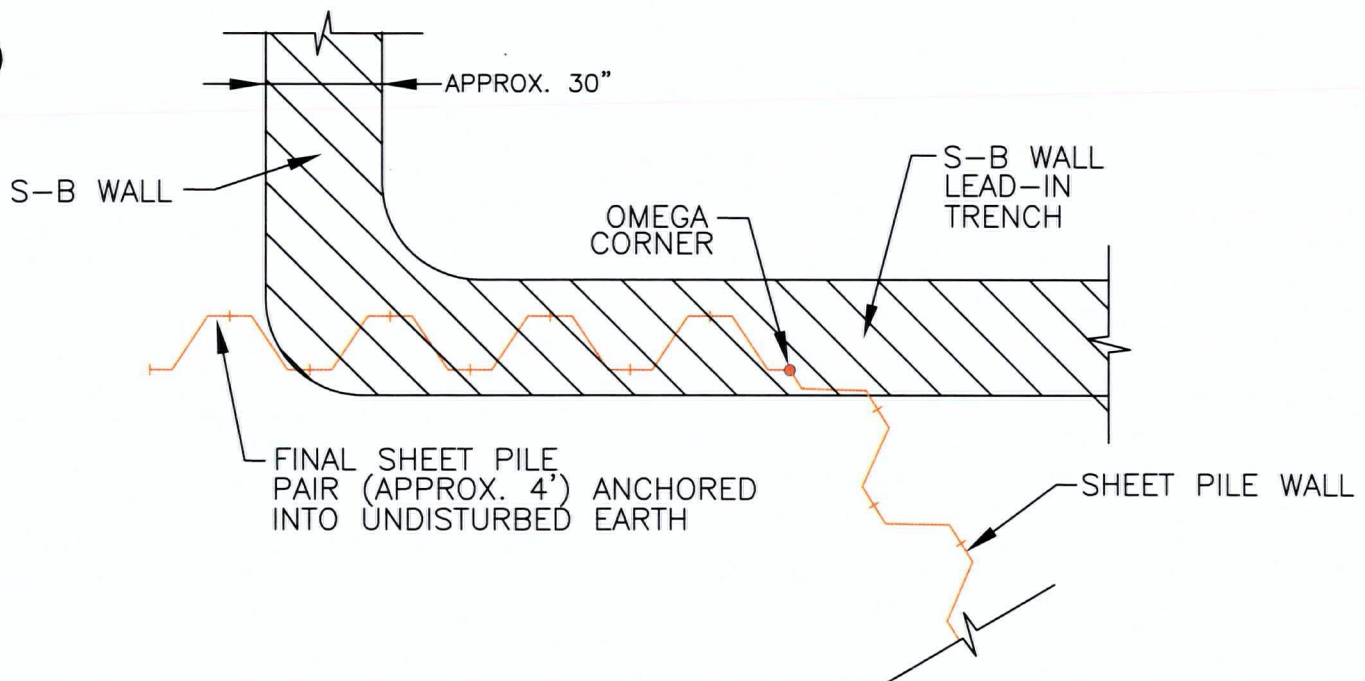
Date:
2-24-04

10:001688OY122901\fig 1-1.cdr






SHEET PILE TO SLURRY WALL TIE-IN DETAIL
NEAR STATION 1+00
 NTS



SHEET PILE TO SLURRY WALL TIE-IN DETAIL
NEAR STATION 15+40
 NTS

 ecology and environment, inc. International Specialists in the Environment Portland, Oregon	OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY		
	FIGURE 2-2 SHEET PILE TO S-B WALL TIE-IN DETAIL		
	BARRIER WALL CONSTRUCTION SUMMARY REPORT		
	DESIGNED BY: C. NANCARROW CHECKED BY: A. WHITMAN DRAWN BY: C. NANCARROW	SCALE NONE	DATE ISSUED 04/05/04 CAS FILE NO. TIE-IN DETAIL.DWG



Aerial Photo by: Hi-Cam®, September 2003.



ecology and environment, inc.
International Specialists in the Environment
Seattle, Washington

McCORMICK AND BAXTER
CREOSOTING COMPANY SITE
REMEDIAL ACTION CONSTRUCTION SUMMARY REPORT
COMBINED SHEET PILE AND S-B BARRIER WALL
Portland, Oregon

Figure 2-3
POST CONSTRUCTION
AERIAL PHOTOGRAPH

Date: 4/16/04	Drawn by: AES	10:001688OY122901\fig 2-3
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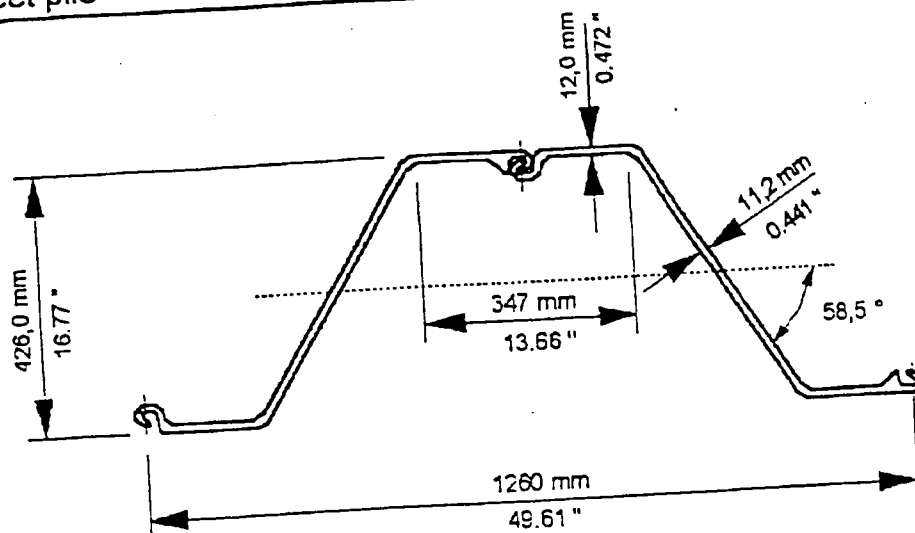
Product Data Submittals

PROFILARBED

FICHE D'INFORMATION SEP 02
INFORMATION SHEET SEP 02

Palplanche
Sheet pile

AZ 25



Echelle : 1:10
Scale :

	Section d'acier Sectional Area	Masse Mass	Moment d'inertie Moment of Inertia	Module de résistance Section Modulus	Rayon de gyration Radius of Gyration	Surface à traiter Coating Area
Palpl. simple Single pile	116.6 cm ²	91.5 kg /m	32910 cm ⁴	1545 cm ³	16.80 cm	1.79 m ² /m
Palpl. double Double pile	233.2 cm ²	183.0 kg /m	65820 cm ⁴	3090 cm ³	16.80 cm	3.56 m ² /m
Paroi Wall	185.0 cm ² /m	145.2 kg /m ²	52250 cm ⁴ /m	2455 cm ³ /m	16.80 cm	2.82 m ² /m ²
Palpl. simple Single pile	18.07 in ²	61.49 lb /ft	790.7 in ⁴	94.3 in ³	6.61 in	5.87 ft ² /ft
Palpl. double Double pile	36.15 in ²	122.97 lb /ft	1581.3 in ⁴	188.6 in ³	6.61 in	11.68 ft ² /ft
Paroi Wall	8.74 in ² /ft	29.74 lb /ft ²	382.6 in ⁴ /ft	45.7 in ³ /ft	6.61 in	2.82 ft ² /ft ²

ISPC

International Sheet Piling Company S.à r.l.
Sales agent for the steel sheet piles, steel piles
and accessories of
PROFILARBED S.A.

Technical & Marketing Department

68, rue de Luxembourg
L - 4009 Esch/Alzette
Phone (352) 53 13 - 31 05
Fax (352) 53 13 - 32 90

Sales Agent:
International Sheet Piling Company
66, rue de Luxembourg
L-4221 ESCH-SUR-ALZETTE

M&L
PROFILARBEID Belval

Certificate Nr E4000000761

Our reference : 02BE999999
Your reference : TESTING
12.12.2002
Receiver : SKYLINE STEEL

SKYLINE STEEL
VIRGINIA SALES OFFICE
5610-B SANDY LEWIS DRIVE
FAIRFAX VA 22032
USA

ASTM A 572/00 GRADE 50

Manufacturer's test certificate acc. to ASTM A 6 - PAR. 12.

Ord. Item	Product	Length	Weight	Heat nr	Weight	Bund.	Pieces
000011	AZ 26 SINGLE PILE	25' 7.620 mm	0,745 mt	ARI-46804	0,745 mt		1
000021	AZ25 SINGLE PILE	25' 7.620 mm	0,697 mt	ASM-47135	0,697 mt		1

Heat nr	Heat analysis (%)							
	C	Mn	P	S	Si	Nb	Mo/C	
Min					0,10	0,005		
Max	0,23	1,50	0,040	0,050	0,40	0,050		
ARI-46804	0,07	1,28	0,022	0,027	0,16	0,014	17,53	
ASM-47135	0,13	1,18	0,022	0,018	0,18	0,006	8,81	

Heat nr	Tensile test			
	PSI	PSI 200 mm	YS	UTS XL (%)
Min	50.000	65.000	18,00	
Max				
ARI-46804	59.885	73.080	20,09	
ARI-46804	58.725	72.210	19,90	
ASM-47135	59.740	79.460	22,57	
ASM-47135	59.305	79.170	22,75	

Muller Gaetan
Porteur de signature spéciale

Post-It® Fax Note 7671

Date	12-11-02	# of pages	1
To	Mark Henry	From	Pius Strass
Co./Dept	DEMITECH	Co.	Skyline Steel
Phone #		Phone #	(253) 858-9405
Fax	(253) 537-5003	Fax #	(253) 858-9406

Sales Agent:

ARCELOR INTERNATIONAL America Inc.
PO Box 10014
NEW-YORK 10014

Site:

ProfilARBED Belval



ARCELOR LONG COMMERCIAL
Arcelor Group

66, rue de Luxembourg, L-221 Esch-sur-Alzette
R.C. Luxembourg Section B 36.177

Certificate Nr X 316511

Delivery note number 316511 from 22 January 2003

Our reference : 1100000744
Your reference : P.O.#81580
10.01.2003
Receiver : Skyline Steel Corporation

Skyline Steel Corporation
Washington Sales Office
5224 Olympic Drive, Suite 101
GIG HARBOR WA 98335
USA

ASTM A 572/00 GRADE 50

Manufacturer's test certificate acc. to ASTM A 6 - PAR 18.

Ord. Item	Product	Length	Weight	Bund.	Pieces	Heat nr
000010	AZ25 DOUBLE PILE	60' 18.288 mm	207,496 mt		62	BB-60429 BC-60430 BE-60431 BF-60436 BH-60433 BL-48256 BN-48255
000020	AZ25 DOUBLE PILE	68' 20.726 mm	531,008 mt		140	W-48257 AX-60447 AY-60461 AZ-60463 BA-60445 BB-60429 BC-60430 BD-60432 BE-60431 BF-60436 BG-60437 BH-60433 BL-48256 BM-48257 BN-48255
000030	AZ25 DOUBLE PILE	70' 21.336 mm	50,759 mt		13	W-48257 BD-60432 BE-60431 BH-60433

Muller Gaetan

Porteur de signature spéciale



STRUCTURALS • H PILES • SHEET PILING • PIPE PILING

5224 Olympic Drive, Suite 101 Gig Harbor, WA 98335 (888) 335-5375 (253) 858-9406 Fax
Tadams@skylinesteel.com www.skylinesteel.com

December 11, 2002

Mr. Mark Henry
REMTECH, Inc.
1803 99th Street East
Tacoma, WA 98445

RE: McCormick & Baxter Combined Barrier Wall / Statement by PROFILARBED
Manufacturer of AZ 25 steel sheet piles.

According to the tender documents for the project in reference tension tests have to be performed by the manufacturer to determine the interlocked joint strength of the AZ 25 piling. Section 02450-2 (E 1) of the specification explicitly requires that "tests shall conform to the piling manufacturers standard test".

To our knowledge, tensile test procedures for the determination of the interlock resistance do exist only for straight web steel piles, the interlocks of which are designed to resist tension forces, when used in cellular cofferdams. For z-shaped sheet piles, interlock strength is not relevant because these piles resist through bending. Under normal load conditions, no interlock tension forces will occur. Due to their cross-section flexibility (plate bending) z-shaped sheet piles cope with deformations occurring during installation (state of the art) without generating major interlock forces. This is why interlock resistance for the Z-sheet piles is not specific in the manufacturers' catalogues and therefore no standard testing procedures exist.

AZ sheet piles have Larssen interlocks. In order to assure that these interlocks are "fit for purpose" several codes (EN 10248-2: 1995, section 10 and EAU 1996, section 8.1.6.6) require minimum interlock interference for the geometry of the interlock. The sheet piles manufactured by ProfilARBED fulfill this criterion and they are part of our quality assurance plan.

As a conclusion we would like to stress that there is no internal procedure for the testing of the interlock joint strength of AZ steel sheet piles. To our knowledge there is no standard procedure for these tests neither for Z- nor for U-shaped sheet piles. These tests do only exist for straight web steel sheet piles.

Respectfully,

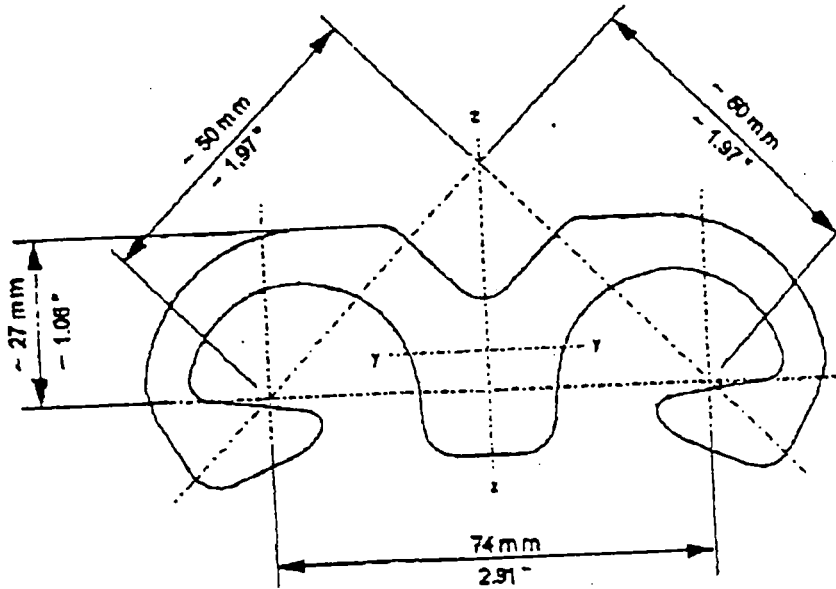
Troy Adams

Troy Adams for Paul THIELEN ProfilARBED Mill Representative.

PROFILARBEED

FICHE D'INFORMATION DEC 97
 INFORMATION SHEET DEC 97

Raccord
 Connector **OMEGA 18**



Echelle : 1:1
 Scale :

Section d'acier	Masse	Moment d'inertie		Module de résistance		Surface à traiter
		y-y	z-z	y-y	z-z	
23.0 cm ²	18.0 kg/m	32.6 cm ⁴	14.5 cm ⁴	14.5 cm ³	2.5 cm ³	0.24 m ² /m

Sectional area	Mass	Moment of inertia		Section modulus		Coating area
		y-y	z-z	y-y	z-z	
3.57 in ²	12.10 lb/r	0.78 in ⁴	0.35 in ⁴	0.88 in ³	0.15 in ³	0.79 ft ² /ft

ISPC

International Sheet Piling Company S.à.r.l.
 Sole agent for the steel sheet piling, steel piles
 and accessories of

PROFILARBEED S.A.

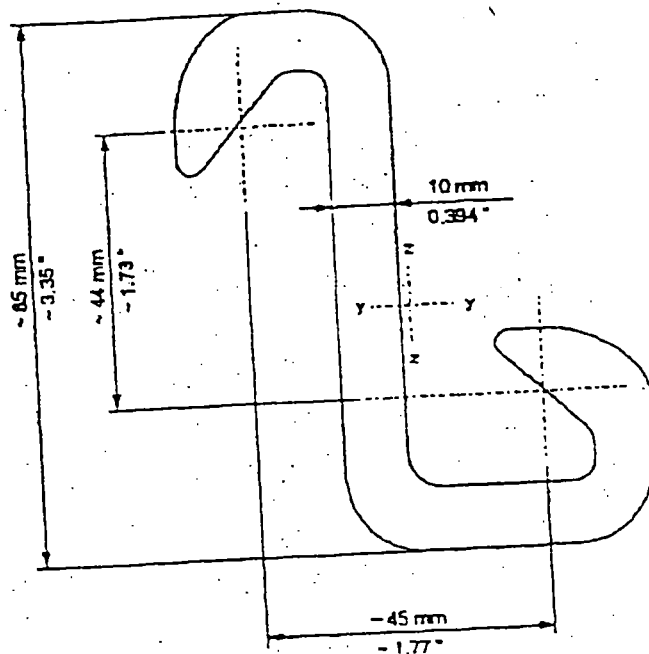
Technical & Marketing Department

98, rue de Luxembourg
 L-4009 Esch/Alzette
 Phone (352) 53 13 - 31 00
 Fax (352) 53 13 - 32 80

PROFILARBED

FICHE D'INFORMATION DEC 97
INFORMATION SHEET DEC 97

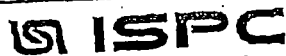
Raccord
Connector **C 14**



Echelle :
Scale : 1:1

Section d'acier	Masse	Moment d'inertie		Module de résistance		Surface à traiter
		y-y	z-z	y-y	z-z	
18.4 cm ²	14.4 kg/m	140.8 cm ⁴	70 cm ⁴	29.5 cm ³	18.6 cm ³	0.22 m ² /m

Sectional area	Mass	Moment of inertia		Section modulus		Coating area
		y-y	z-z	y-y	z-z	
2.85 in ²	9.68 lb/ft	3.38 in ⁴	1.68 in ⁴	1.80 in ³	1.14 in ³	0.72 ft ² /ft



International Sheet Piling Company S.à r.l.
Sales agent for the steel sheet piles, steel piles
and accessories of

PROFILARBED S.A.

Technical & Marketing Department

66, rue de Luxembourg
L - 4009 Esch/Alzette
Phone (352) 53 13 - 31 05
Fax (352) 53 13 - 32 90

TECHNICAL INFORMATION SHEET

WYO-BEN, INC.
 550 South 24th Street West, Suite 201
 P. O. Box 1979
 Billings, Montana 59103 USA
 Tel: 406-652-6351 / Fax: 406-656-0748
www.wyoben.com



SUBJECT: NATURALGEL®

All natural sodium bentonite meeting API Nontreated specification (Spec. 13A Section 5, Fifteenth Ed., May, 1993) requirements.

COLOR: Light Gray

TYPICAL CHEMICAL ANALYSIS:	%
SiO ₂	61.4
Al ₂ O ₃	18.1
Fe ₂ O ₃	3.5
Na ₂ O	2.3
MgO	1.7
CaO	.4
TiO ₂	.2
K ₂ O	.1
Other	.07
H ₂ O	7.8
L.O.I.	4.4

TRACE METALS: P.P.M.

Arsenic	0.1
Barium	0.05
Cadmium	0.05
Chromium	0.1
Lead	0.1
Mercury	0.02
Selenium	0.05
Silver	0.1

SPECIFIC GRAVITY: 2.55

pH (5% SUSPENSION): 9.1

CATION EXCHANGE CAPACITY:
 meqs/100 gms 80 - 90

SURFACE AREA (m²/gm):
 External Surface 82
 All Surfaces 800

BULK DENSITY (lbs/ft³): 52 ± 3

PARTICLE SIZE:

% Passing 200 Mesh Sieve 80 ± 4

TYPICAL CHARACTERISTICS: Typical
Criteria (API 13A, Sec. 5 Spec) Test Results

YP/PV Ratio 1.5 Max	0.8
Plastic Viscosity 10 CP., Min.	12.0
Filtrate, 30 minute 12.5 cm ³ , Max.	10.0

USES:

Small diameter borehole drilling for water wells, monitoring wells or minerals exploration. Oil and gas drilling.



NATURALGEL®



For use in drilling operations where **unaltered** high quality sodium bentonite is desirable. Ideal for drilling water monitor wells where additives may affect chemical analysis. NATURALGEL® is used in oil and gas exploration, slurry trenching, diaphragm walls, and as a soil add mixture.

PRODUCT CHARACTERISTICS:

- 200 mesh viscosity builder
- Meets or exceeds API 13A Sec. 5
- Naturally enhances fluid loss characteristics
- Aids in bore hole and trench stabilization
- Has no additives to influence water analysis
- pH of $9.1 \pm .1$

TYPICAL CHEMICAL ANALYSIS			
	%		%
SiO ₂	61.5	Al ₂ O ₃	18.5
Fe ₂ O ₃	1.5	CaO	0.5
MgO	1.5	Na ₂ O	1.5
CO ₂	1.5	SO ₄	0.5
Y ₂ O ₃	0.5		

Note: Expression of elements as oxides results from standard chemical analysis method. Elements are not present in bentonite as oxides.

! Mix 20 to 50 pounds per 100 gallons of make-up water.

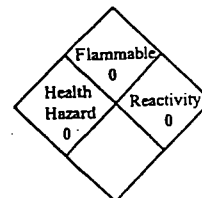
! Allow extra circulation time before drilling to insure proper hydration of NATURALGEL®

NATURALGEL® is available 50 pound or 100 pound multi-walled paper bags, bulk bags, or bulk.



WYO-BEN, INC.

MATERIAL SAFETY DATA SHEET



NFPA FIRE HAZARD
IDENTIFICATION SYSTEM

I. PRODUCT IDENTIFICATION

Trade Name(s): **NATURALGEL®**

Generic Name(s): Wyoming (Western) Bentonite; Bentonite Clay (CAS No. 1302-78-9)

Chemical Name(s): Sodium Montmorillonite (CAS No. 1318-93-0)

Manufacturer: **WYO-BEN, INC.**
Address: P.O. Box 1979
Billings, Montana 59103

Telephone Numbers:
Information: (406) 652-6351
EMERGENCY: (406) 652-6351

II. HAZARDOUS INGREDIENTS

Ingredient	CAS NO.	%	Hazard
Crystalline Silica (SiO ₂) as Quartz	14808-60-7	See Note	Low concentrations of crystalline silica (SiO ₂) in the form of quartz may be present in airborne bentonite dust. See Section VI for discussion of health hazard.

Note: Although the typical quartz content of western bentonite is in the range of 2 to 6% most of the quartz particles are larger than the 10 μ respirable threshold size. The actual respirable quartz concentration in airborne bentonite dust will depend upon bentonite source, fineness of product, moisture content of product, local humidity and wind condition at point of use and other use specific factors.

III. PHYSICAL DATA

Boiling Point (°F): NA	Specific Gravity (H ₂ O=1): 2.45-2.55
Vapor Pressure (mm. Hg): NA	Melting Point: Approx. 1450°C
Vapor Density (Air = 1): NA	Evaporation Rate (Butyl Acetate = 1): NA
Solubility in Water: Insoluble, forms colloidal suspension.	pH: 8-10 (5% aqueous suspension)
Density (at 20° C): 55 lbs./cu.ft. as product.	

Appearance and Odor: Bluegray to green as moist solid, light tan to gray as dry powder. No odor.

IV. FIRE AND EXPLOSION DATA

Flash Point: NA

Flammable Limits: LEL: NA UEL: NA

Special Fire Fighting Procedures: NA

Unusual Fire and Explosion Hazards: None. Product will not support combustion.

Extinguishing Media: None for product. Any media can be used for the packaging. Product becomes slippery when wet.

V. REACTIVITY

Stability: Stable

Hazardous Polymerization: None

Incompatibility: None

Hazardous Decomposition Products: None

NA = Not Applicable ND = Not Determined

Date Prepared: March 15, 2001

Doc #: 1060-00

VI. HEALTH HAZARD INFORMATION

Routes of Exposure and Effects:

Skin: Possible drying resulting in dermatitis.

Eyes: Mechanical irritant.

Inhalation: *Acute* (short term) exposure to dust levels exceeding the PEL may cause irritation of respiratory tract resulting in a dry cough. *Chronic* (long term) exposure to airborne bentonite dust containing respirable size ($\leq 10 \mu$) quartz particles, where respirable quartz particle levels are higher than TLV's, may lead to development of silicosis or other respiratory problems. Persistent dry cough and labored breathing upon exertion may be symptomatic.

Ingestion: No adverse effects.

Permissible Exposure Limits: (for air contaminants)

Bentonite as "Particulates not otherwise regulated"
(formerly nuisance dust)

Total dust

Respirable dust

Crystalline Quartz (respirable)

OSHA PEL
(8hr. TWA)

15mg/m³

5mg/m³

0.1mg/m³

ACGIH TLV

ND

ND

0.1mg/m³

Carcinogenicity: Bentonite is not listed by ACGIH, IARC, NTP or OSHA. IARC, 1997, concludes that there is sufficient evidence in humans for the carcinogenicity of inhaled crystalline silica from occupational sources (IARC Class 1), that carcinogenicity was not detected in all industrial circumstances studied and that carcinogenicity may depend on characteristics of the crystalline silica or on external factors affecting its biological activity. NTP classifies respirable crystalline silica as "known to be a human carcinogen" (NTP 9th Report on Carcinogens - 2000). ACGIH classifies crystalline silica, quartz, as a suspected human carcinogen (A2).

Acute Oral LD₅₀: ND

Acute Dermal LD₅₀: ND

Aquatic Toxicology LC₅₀: ND

Emergency and First Aid Procedures:

Skin: Wash with soap and water until clean.

Eyes: Flush with water until irritation ceases.

Inhalation: Move to area free from dust. If symptoms of irritation persist contact physician. Inhalation may aggravate existing respiratory illness.

VII. HANDLING AND USE PRECAUTIONS

Steps to be Taken if Material is Released or Spilled: Avoid breathing dust; wear respirator approved for silica bearing dust. Vacuum up to avoid generating airborne dust. Avoid using water. Product slippery when wetted.

Waste Disposal Methods: Product should be disposed of in accordance with applicable local, state and federal regulations.

Handling and Storage Precautions: Use NIOSH/MSHA respirators approved for silica bearing dust when free silica containing airborne bentonite dust levels exceed PEL/TLV's. Clean up spills promptly to avoid making dust. Storage area floors may become slippery if wetted.

VIII. INDUSTRIAL HYGIENE CONTROL MEASURES

Ventilation Requirements: Mechanical, general room ventilation. Use local ventilation to maintain PEL's/TLV's.

Respirator: Use respirators approved by NIOSH/MSHA for silica bearing dust.

Eye Protection: Generally not necessary. Personal preference.

Gloves: Generally not necessary. Personal preference.

Other Protective Clothing or Equipment: None

IX. SPECIAL PRECAUTIONS

Avoid prolonged inhalation of airborne dust.

DEPARTMENT OF TRANSPORTATION HAZARDOUS MATERIAL INFORMATION

Shipping Name: NA (Not Regulated)

Hazard Class: NA

Hazardous Substance: NA

Caution Labeling: NA

Date Prepared: March 15, 2001

Doc #: 1060-00

All information presented herein is believed to be accurate, however, it is the user's responsibility to determine in advance of need that the information is current and suitable for their circumstances. No warranty or guarantee, expressed or implied is made by WYO-BEN, INC. as to this information, or as to the safety, toxicity or effect of the use of this product.

Wilkins Trucking Co.

**Heavy Haul/High Volume
Specialty Carrier
Pumice/Cinder/Rock/Sand Sales**

**Serving the Northwest
Since 1977**

**Woody Mitchell
Operations/Sales Manager
Office (503) 283-3000
Cell (360) 936-3653
Fax (503) 283-2454**

GAI Consultants, Inc.
Amount of Material in Soils Finer Than the No. 200 Sieve
ASTM D 1140

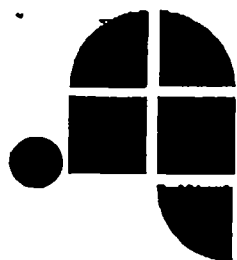
Project : Geo-Solutions ; McCormick & Baxter Creosoting Co.
Project No. : 2002-109-01

Tested by : DFS
Date tested : 01/30/03
Checked by : DJN

Sample : MB025 ; Wilkins Trucking Clay
Description.: Red brown to orange brown fat clay with sand LL : 54.0 PL : 25.1 PI : 28.9

<u>Water Content of Sample</u>	<u>Total Sample Weight</u>	<u>Washed Sample Weight</u>
Tare + WS 137.92	Soil + Tare 306.55	Soil + Tare 32.89
Tare + DS 111.14	Tare 0	Tare 0
Tare 9.44	Soil (Wet) 306.55	Soil 32.89
W.C. 26.33 %	Soil (Dry) 242.65	
	% Passing #200 = 86.4 %	





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PROPERTY	TEST METHOD	VALUES
Roll Width		3.29' or 6.58' or 9.87' or 13.16'
Roll Length		164.05
Weight grams/sq/m	ASTM-D3776	700
Thickness mils (mm)	ASTM-D1777	249.60 (6.34)
Warp Ends/Per 10cm		11.00
Weft Picks/Per 10cm		7.00

Wide-Width Strip Tensile Properties

DRY-Ultimate Strength lbs/in		
Roll Direction	ASTM-D4599	114.70
Cross Roll Direction		54.10
Ultimate Strain -%		
Roll Direction	ASTM-D4599	23.9
Cross Roll Direction		249.60

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B

Summary of Off-Site Laboratory Test Results

Laboratory SB Backfill Test Summary

Project Name: McCormick & Baxter Superfund Site
Project Location: Portland, Oregon
Project Type: SB Slurry Wall

Client Name: REMTECH/Geo-Solutions
Client Project Number: RT02-0014
STL Job Number: 03-172

Sample Data												Sieve Analysis (ASTM D422)		Hydraulic Conductivity Test							
Sample Number	Field Sample I.D.	Sample Date	Received Date	Testing Date	STA Number	Material Type	Cobble %	Gravel %	Sand %	Fines %	Material Description	After Test Dia. (in.)	After Test Ht. (in.)	Final Moisture Content (%)	Final Dry Density (pcf)	Final Porosity	B Value	Test Method (ASTM)	Perm Rate cm/sec		
001	100403	4/10/03	4/11/03	4/14/03	39+30	Backfill	0.0	5.5	60.2	34.3	Dark brown clayey SAND	2.80	2.50	25.6	99.7	0.4085	0.97	D5856	8.10E-08		
002	140403-1200	4/14/03	4/16/03	4/16/03	39+30	Backfill	0.0	8.2	62.6	29.2	Dark brown clayey SAND	2.80	2.49	25.9	99.2	0.4112	0.98	D5856	7.50E-08		
003	150403-1130	4/15/03	4/16/03	4/16/03	39+20	Backfill	0.0	9.7	68.0	22.3	Dark brown clayey SAND	2.80	2.40	24.0	102.2	0.3938	0.96	D5856	6.47E-08		
004	160403-0930	4/16/03	4/17/03	4/17/03	39+10	Backfill	0.0	16.2	60.3	23.5	Dark brown clayey SAND	2.80	2.42	25.1	100.4	0.4041	0.99	D5856	4.48E-08		
005	170403-0840	4/17/03	4/18/03	4/18/03	39+10	Backfill	0.0	6.6	63.0	30.4	Dark brown clayey SAND	2.80	2.40	23.7	102.9	0.3895	1.00	D5856	4.05E-08		
006	210403-0815	4/21/03	4/22/03	4/22/03	38+50	Backfill	0.0	6.6	67.0	26.4	Dark brown clayey SAND	2.80	2.63	27.3	97.0	0.4244	0.97	D5856	3.19E-08		
007	220403-0920	4/22/03	4/23/03	4/23/03	37+50	Backfill	0.0	3.9	65.4	30.7	Dark brown clayey SAND	2.80	2.36	26.4	98.8	0.4140	0.98	D5856	5.10E-08		
008	230403-1530	4/23/03	4/25/03	4/25/03	14+40	Backfill	0.0	4.2	81.9	13.9	Dark brown clayey SAND	1.92	3.10	24.6	102.2	0.4046	0.97	D5084	8.36E-08		
009	240403-1330	4/24/03	4/25/03	4/25/03	14+40	Backfill	0.0	4.6	81.6	13.8	Dark brown clayey SAND	1.99	3.06	25.1	101.1	0.4067	0.97	D5084	8.64E-08		
010	280403-1000	4/28/03	4/29/03	4/29/03	14+40	Backfill	0.0	1.8	83.9	14.5	Dark brown clayey SAND	2.80	2.68	28.3	94.4	0.4271	0.98	D5856	9.66E-08		
011	290403-0800	4/29/03	4/30/03	4/30/03	14+40	Backfill	0.0	10.8	72.1	17.1	Dark brown clayey SAND	2.80	2.66	28.2	95.4	0.4444	0.97	D5856	2.16E-08		
012	300403-0845	4/30/03	5/1/03	5/1/03	14+50	Backfill	0.0	3.4	78.5	18.1	Dark brown clayey SAND	2.80	2.66	28.2	95.9	0.4311	0.98	D5856	9.48E-08		
013	010503-0900	5/1/03	5/2/03	5/2/03	14+90	Backfill	0.0	2.4	74.7	22.9	Dark brown clayey SAND	2.80	2.81	29.1	95.3	0.4428	0.96	D5856	3.97E-08		
014	050503-900	5/5/03	5/6/03	5/6/03	15+30	Backfill	0.0	4.3	72.5	23.2	Dark brown clayey SAND	2.80	2.50	31.8	91.8	0.4655	0.99	D5084	3.37E-08		
015	060503-915	5/6/03	5/7/03	5/7/03	16+10	Backfill	0.0	5.1	70.8	24.1	Dark brown clayey SAND	2.80	2.35	30.7	92.1	0.4535	1.00	D5856	7.96E-08		
016	070503-0915	5/7/03	5/8/03	5/8/03	17+30	Backfill	0.0	3.4	64.2	32.4	Dark brown clayey SAND	1.99	2.60	35.6	87.0	0.4850	0.98	D5084	8.08E-08		
017	080503-0845	5/8/03	5/9/03	5/9/03	18+40	Backfill	0.0	3.1	69.3	27.6	Dark brown clayey SAND	2.80	2.37	30.2	93.3	0.4505	0.98	D5856	2.77E-08		
018	120503-0945	5/12/03	5/13/03	5/13/03	19+00	Backfill	0.0	4.3	65.6	30.1	Dark brown clayey SAND	2.80	2.27	27.7	96.9	0.4296	0.97	D5856	3.68E-08		
019	120503-1630	5/12/03	5/14/03	5/14/03	20+10	Backfill	0.0	2.8	71.0	26.2	Dark brown clayey SAND	2.80	2.55	30.2	93.1	0.4515	0.96	D5856	3.47E-08		
020	130503-0800	5/13/03	5/14/03	5/14/03	20+30	Backfill	0.0	6.4	70.6	23.0	Dark brown clayey SAND	1.98	3.42	24.7	102.6	0.4043	1.00	D5084	3.98E-08		
021	130503-1400	5/13/03	5/15/03	5/15/03	21+30	Backfill	0.0	3.7	71.5	24.8	Dark brown clayey SAND	2.80	2.35	30.9	92.2	0.4569	0.99	D5856	5.06E-08		
022	140503-0815	5/14/03	5/15/03	5/15/03	21+80	Backfill	0.0	7.0	63.2	29.8	Dark brown clayey SAND	2.80	2.57	30.2	93.5	0.4495	0.96	D5856	4.82E-08		
023	140503-1400	5/14/03	5/16/03	5/16/03	22+80	Backfill	0.0	5.0	65.1	29.9	Dark brown clayey SAND	2.80	2.50	28.6	96.0	0.4408	1.0000	D5856	3.24E-08		

Sample Data						Sieve Analysis (ASTM D422)					Hydraulic Conductivity Test								
Sample Number	Field Sample I.D.	Sample Date	Received Date	Testing Date	STA Number	Material Type	Cobble %	Gravel %	Sand %	Fines %	Material Description	After Test Dia. (in.)	After Test Ht. (in.)	Final Moisture Content (%)	Final Dry Density (pcf)	Final Porosity	B Value	Test Method (ASTM)	Perm Rate cm/sec
024	150503-0845	5/15/03	5/18/03	5/18/03	23+20	Backfill	0.0	10.0	81.4	28.6	Dark brown clayey SAND	2.00	3.00	26.0	100.0	0.4173	0.97	D5084	3.45E-08
025	190503-0815	5/19/03	5/19/03	5/20/03	24+80	Backfill	0.0	5.1	81.3	33.6	Dark brown clayey SAND	1.98	3.00	26.8	100.2	0.4308	0.99	D5084	3.37E-08
026	200503-0815	5/20/03	5/20/03	5/21/03	24+80	Backfill	0.0	3.0	49.0	48.0	Dark brown clayey SAND	2.80	2.47	30.3	93.9	0.4532	0.98	D5856	3.12E-08
027	210503-0815	5/21/05	5/22/03	5/22/03	24+80	Backfill	0.0	8.1	81.3	32.6	Dark brown clayey SAND	2.80	2.85	30.1	94.0	0.4523	0.99	D5856	2.18E-08
028	210503-1330	5/21/03	5/23/03	5/23/03	26+80	Backfill	0.0	1.5	85.0	33.5	Dark brown clayey SAND	2.80	2.81	27.4	98.0	0.4289	1.00	D5856	5.79E-08
029	220503-0900	5/22/05	5/23/03	5/23/03	27+10	Backfill	0.0	6.0	56.4	37.6	Dark brown clayey SAND	2.80	2.43	29.9	94.3	0.4507	0.97	D5856	2.94E-08
030	220503-1545	5/22/05	5/28/03	5/28/03	27+90	Backfill	0.0	6.3	51.1	42.6	Dark brown clayey SAND	2.80	2.32	31.7	91.0	0.4622	0.99	D5856	4.08E-08
031	270503-0815	5/22/03	5/28/03	5/28/03	28+20	Backfill	0.0	2.0	57.8	40.2	Dark brown clayey SAND	2.00	2.59	38.7	83.9	0.5113	0.98	D5084	5.77E-08
032	270503-1530	5/27/03	5/29/03	5/29/03	29+30	Backfill	0.0	6.5	52.3	41.2	Dark brown clayey SAND	1.98	3.21	32.3	80.2	0.4647	0.97	D5084	2.15E-08
033	280503-0830	5/28/03	5/29/03	5/29/03	29+40	Backfill	0.0	5.1	48.0	46.9	Dark brown clayey SAND	2.00	3.55	30.6	94.7	0.4620	0.98	D5084	5.04E-08
034	280503-1445	5/28/03	5/30/03	5/30/03	30+30	Backfill	0.0	1.1	67.2	41.7	Dark brown clayey SAND	2.80	2.37	30.1	92.0	0.4438	0.98	D5856	3.66E-08
035	290503-0845	5/28/03	5/30/03	5/30/03	30+50	Backfill	0.1	3.6	63.2	33.1	Dark brown clayey SAND	2.80	2.83	27.0	97.4	0.4219	0.98	D5084	4.18E-08
036	300503-0900	5/30/03	5/30/03	6/3/03	31+50	Backfill	0.0	2.6	56.1	41.3	Dark brown clayey SAND	2.00	3.19	30.1	94.8	0.4574	0.98	D5856	2.98E-08
037	300503-1615	5/30/03	6/3/03	6/3/03	32+70	Backfill	0.0	1.5	55.0	43.5	Dark brown clayey SAND	1.98	3.11	24.1	103.8	0.4016	0.98	D5084	1.60E-08
038	020803-0830	6/2/03	6/3/03	6/3/03	33+00	Backfill	0.0	4.0	61.0	35.0	Dark brown clayey SAND	2.80	2.80	29.7	92.6	0.4401	0.98	D5856	3.88E-08
039	030803-1000	6/5/03	6/4/03	6/4/03	34+20	Backfill	0.0	3.3	64.6	32.1	Dark brown clayey SAND	2.00	3.12	26.7	99.1	0.4225	0.99	D5084	2.56E-08
040	030803-1500	6/5/03	6/4/03	6/4/03	35+70	Backfill	0.0	2.9	46.9	50.2	Dark brown clayey SAND	2.80	2.38	33.8	89.7	0.4834	0.97	D5856	4.20E-08

Laboratory Insitu Sample Test Summary

Project Name:
Project Location:
Project Type:

McCormick & Baxter Superfund Site
Portland, Oregon
SB Slurry Wall

Client Name: REMTECH/Geo-Solutions
Client Project Number: RT02-0014
STL Job Number: 03-172

Sample Data							Sieve Analysis (ASTM D422)					Limits (ASTM D4318)			Perm Test (ASTM D5084)				
Sample Number	Field Sample I.D.	Depth (ft)	Sample Date	Received Date	Testing Date	STA Number	Material Type	Cobble %	Gravel %	Sand %	Fines %	Material Discription	Liquid Limit	Plastic Limit	Plasticity Index	Moisture Content (%)	Density (pcf)	B Value	Perm Rate cm/sec
SS 001	060503-1530	-	5/6/03	5/8/03	5/8/03	36+34	Shelby	0.0	10.3	65.9	23.8	Dark brn clayey SAND	29	19	10	27.7	91.1	0.99	3.12E-08
SS 002	060503-1630	-	5/6/03	5/8/03	5/8/03	36+50	Shelby	0.0	8.5	59.6	31.9	Dark brn clayey SAND	35	19	16	26.0	97.7	0.97	2.86E-08
005	020603-1700	14.0-14.5	6/2/03	6/5/03	6/5/03	16+00	2.43" Liner	0.0	2.1	78.4	19.5	Brown clayey SAND	35	18	17	29.2	95.3	0.98	8.39 E-08
008	020603-1700	36.5-37.0	6/2/03	6/5/03	6/5/03	16+00	2.43" Liner	0.0	1.0	78.9	20.1	Brown clayey SAND	34	20	14	27.7	97.4	0.97	9.02E-08
014	020603-1700	61.5-62.0	6/2/03	6/5/03	6/5/03	16+00	2.43" Liner	0.0	1.8	80.4	17.8	Brown clayey SAND	31	19	12	26.1	100.0	0.96	9.50E-08
017	030603-1005	10.0-10.5	6/3/03	6/5/03	6/5/03	21+90	2.43" Liner	0.0	5.4	64.0	30.6	Brown clayey SAND	34	14	20	21.1	105.7	0.95	4.17E-08
021	030603-1005	20.0-20.5	6/3/03	6/5/03	6/5/03	21+90	2.43" Liner	0.0	12.5	64.7	22.8	Brown clayey SAND	29	21	8	21.8	102.9	0.99	5.88E-08
024	030603-1005	32.0-32.5	6/3/03	6/5/03	6/5/03	21+90	2.43" Liner	0.0	5.1	70.6	24.3	Brown clayey SAND	32	20	12	23.5	99.0	0.95	7.03E-08
029	180603-1153	13.0'-13.5'	6/18/03	6/19/03	6/20/03	28+00	2.43" Liner	0.0	4.8	45.2	50.0	clayey SAND	35	22	13	32.7	90.4	1.00	5.80E-08
032	180603-1153	26.0'-26.5'	6/18/03	6/19/03	6/20/03	28+00	2.43" Liner	0.0	15.7	38.1	46.2	clayey SAND w/ gravel	39	23	16	28.8	95.8	0.98	4.80E-08
036	180603-1153	36.0'-36.5'	6/18/03	6/19/03	6/20/03	28+00	2.43" Liner	0.0	6.5	74.3	19.2	clayey SAND	34	20	14	26.8	98.8	0.97	3.40E-08
039	180603-1618	12.5'-13.0'	6/18/03	6/19/03	6/20/03	34+00	2.43" Liner	0.0	6.2	73.9	19.9	clayey SAND	32	20	12	23.9	103.7	0.97	4.22E-08
044	180603-1618	26.0'-26.5'	6/18/03	6/19/03	6/20/03	34+00	2.43" Liner	0.0	3.1	42.9	54.0	sandy lean CLAY	33	22	11	27.5	97.8	0.97	2.37E-08
049	180603-1618	36.5'-37.0'	6/18/03	6/19/03	6/20/03	34+00	2.43" Liner	0.0	1.1	54.1	44.8	clayey SAND	47	24	23	26.5	99.3	0.96	8.18E-08

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Biological Monitoring Report



ecology and environment, inc.

International Specialists in the Environment

333 SW Fifth Avenue
Portland, Oregon 97204
Tel: 503/248-5600, Fax: 503/248-5577

October 31, 2003

Dr. Nancy Munn
NOAA Fisheries
Oregon Habitat Branch
Attn: 2002/00761
525 NE Oregon Street
Portland, Oregon 97232

Re: McCormick and Baxter Creosoting Company Site, Biological Monitoring Report,
Portland, Oregon, Task Order No. 71-03-02, E & E Project Number 001688.OY02.29.01

Dear Dr. Munn:

On behalf of the Oregon Department of Environmental Quality (DEQ) and the Environmental Protection Agency (EPA) please find attached, two bound copies of the Biological Monitoring Report for the construction of the Combined Sheet Pile and Soil-Bentonite Barrier Wall at the McCormick and Baxter Creosoting Company site in Portland, Oregon. The report covers construction activities from April 1 through August 12, 2003.

Sincerely,

ECOLOGY AND ENVIRONMENT, INC.

John Montgomery
Task Order Manager

cc: John Montgomery, E & E (letter only)
Alan Goodman, EPA (2 bound copies)
Kevin Parrett, DEQ (2 bound copies)
Steve Campbell (1 bound copy)
E & E file 001688.OY02.29.01

**BIOLOGICAL MONITORING REPORT
COMBINED SHEET PILE AND SOIL-BENTONITE
BARRIER WALL CONSTRUCTION
APRIL 1 THROUGH AUGUST 12, 2003
McCORMICK & BAXTER
CREOSOTING COMPANY
PORTLAND, OREGON**



October 2003

Task Order No. 71-03-02

e
&
ecology and environment, inc.



State of Oregon
Department of
Environmental
Quality

Biological Monitoring Report

**Combined Sheet Pile and Soil-Bentonite
Barrier Wall Construction
McCormick & Baxter
Creosoting Company
Portland, Oregon**

Task Order No. 71-03-02

October 2003

Prepared for:

**OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY
811 Southwest Sixth Avenue
Portland, Oregon 97204**

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List of Abbreviations and Acronyms

BiOp	Biological Opinion
BMPs	Best Management Practices
cfs	cubic feet per second
DEQ	Oregon Department of Environmental Quality
E & E	Ecology and Environment, Inc.
FWDA	former waste disposal area
McCormick & Baxter	McCormick & Baxter Creosoting Company
NGVD	National Geodetic Vertical Datum
NOAA Fisheries	National Oceanic and Atmospheric Administration Fisheries
Remtech	Remtech, Inc.

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1

Introduction

This biological monitoring report was prepared to document the biological monitoring activities associated with the installation of the combined sheet pile and soil-bentonite barrier wall at the McCormick & Baxter Creosoting Company (McCormick & Baxter) site in Portland, Oregon. These activities were described in the *Biological Monitoring and Reporting Plan* (Ecology and Environment, Inc. [E & E] 2003). Biological monitoring and other measures were initiated to ensure that the terms and conditions prescribed within the National Oceanic and Atmospheric Administration Fisheries (NOAA Fisheries) Biological Opinion (BiOp) were fulfilled (NOAA Fisheries 2003). E & E utilized a full-time, on-site biological monitor when construction activities were performed within 100 feet of the shoreline.

This summary report satisfies the reporting requirements of the BiOp, including project identification, project initiation and completion dates, photographic documentation during and after project completion, and documentation of any reported sighting of a sheen on the water for the McCormick & Baxter barrier wall construction project.

The remaining sections of this report are:

- "Project Identification" (Section 2), including a general site description, a summary of construction activities, and project initiation and completion dates;
- "Baseline Survey" (Section 3), which provides a summary of a baseline vegetation survey that was conducted before construction and that will be used to ensure that revegetation requirements are met following sediment cap construction;
- "Monitoring Activities" (Section 4), which describes the various monitoring activities conducted by the on-site biological and construction monitors during construction, including observations of sheen on the water;



1. Introduction

- “Notification of Sick, Injured, or Dead Species” (Section 5), which includes a discussion of notification activities that occurred during the construction period;
- “References” (Section 6); and
- “Daily Biological Monitoring Forms” (Appendix A), “Erosion and Sediment Transport Control Measure Forms” (Appendix B), and “Photodocumentation” (Appendix C).

2

Project Identification

2.1 Site Description

The McCormick & Baxter site is located on the Willamette River in Portland, Oregon, downstream of Swan Island and upstream of the St. Johns Bridge at 6900 North Edgewater Street. The site is directly adjacent to and east of the Willamette River, which flows to the northwest in the site vicinity. The site's surface topography is a generally flat terrace formed by dredged material placement sometime in the early 1900s. The site footprint encompasses approximately 43 acres on land (upland area) and 17 acres in the river (in-water area). The upland portion lies between a 120-foot-high bluff near the northeast border and a 20-foot-high bank along the Willamette River to the southwest. The site is bordered by inactive industrial properties to the south and a residential area on the bluff to the north.

The Willamette River is a major river that flows northwest through Portland and the site to the Columbia River. The Willamette River is the only surface water body at the site. The site is approximately 7 miles upstream of the confluence of the Willamette River and the Columbia River (River Milepost 7). The Willamette River is not used as a drinking water source downstream of the site. The stream reach along the site is approximately 1,500 feet wide and flows at a rate ranging from 8,300 cubic feet per second (cfs) in summer to 73,000 cfs in winter. Channel sounding maps indicate that adjacent to the site, the navigation channel is maintained at a width of approximately 600 feet and to a maximum depth of 40 feet below the Columbia River datum. A sandy beach with woody debris and sparse vegetation is exposed at the base of the bank most of the year, except during brief periods of high river stage (i.e., generally during late winter or early spring).

In the early 1900s, the first industrial structure, a sawmill, was built on the site. In 1944, the McCormick & Baxter Creosoting Company began wood-treating operations that continued until October 10, 1991.

Shallow groundwater gradients generally trend from the bluff toward the river. Intermediate and deep zone groundwater surface elevations and gradients indicate groundwater flow toward the river in these zones (E & E 2002a).

2.2 Construction Activities

Former wood-treating operations at the McCormick & Baxter creosoting facility have resulted in widespread contamination of soil and groundwater across much of the property. Key contaminants of concern include carcinogenic polynuclear aromatic hydrocarbons, pentachlorophenol, arsenic, and dioxins/furans. To minimize off-site contaminant migration, a combined subsurface sheet pile and soil-bentonite barrier wall was constructed. This activity also included removal of large pieces of wood along the shoreline to facilitate sheet pile construction. The sheet pile construction did not require removal of any pilings as had previously been anticipated.

The sheet pile wall was driven into the ground adjacent to the river with a vibratory hammer. The other three sides of the containment wall were constructed of a soil-bentonite mix, installed by the slurry trench method utilizing specialized excavation equipment.

Sheet Pile Wall

The definable features of the sheet pile wall construction — mobilization, site preparation, and installation — are described below.

Mobilization

Mobilization for the sheet pile wall included delivery and on-site assembly of two cranes, mobilization and assembly of a vibratory hammer and power unit, and delivery and staging of sheet piles.

Site Preparation

Site preparation included clearing work zones, installing erosion control measures (e.g., silt fencing and biobags) between the working area and the Willamette River, and displacing woody debris along the river to allow for working platform construction. Once the erosion control measures were installed, an approximately 30-foot-wide working platform was constructed along surveyed alignment stakes using a dozer. The platform provided easy and safe access for laborers and equipment and a level working surface for sheet pile installation.

Installation

Approximately 1,466 linear feet (99,000 square feet) of sheet piles was installed along the bank of the Willamette River using a panel driving technique. The installation technique consisted of setting and partially driving six to eight sheet pile pairs (a panel). Each newly placed pair was checked for plumb and alignment. Alignment was controlled using a template of two welded I-beams, which was placed along the surveyed wall alignment. Before the first panel was driven to grade, a second panel was set and partially driven. After setting of the second panel, the sheet piles in the first panel were driven in reverse order of setting.

Actual driving of the sheet was accomplished using a vibratory hammer suspended and lowered onto the sheet pile using the second crane. Hydraulic lines

2. Project Identification

connected the power/control unit to the hammer. Using the control switch panel, the sheet pile drivers were able to open and close the vice clamp, turn the vibration on and off, and change the frequency at which the vibrator operated.

Two areas of difficult driving (refusal areas) were encountered during the installation. One area was encountered near the bulkhead/wood retaining wall region (STA 8+00 to 9+00), and the other at the north end tie-in into the soil-bentonite wall (near STA 15+00) in the former waste disposal area (FWDA). Multiple attempts using several different approaches were made to get refusals to plan grade. To ascertain the cause of the refusal, a drill rig and crew were mobilized to the site. Several borings were performed adjacent to and within 2 feet of the refusal sheets. Borings were advanced to depths well below the wall design depth. No obvious obstruction was encountered. It is hypothesized that the refusals were due to a combination of encountering tight sandy formations and the total surficial friction on the sheets. Despite significant efforts, six sheets met with refusal before design penetration depth (three in the bulkhead area and three in the FWDA). The penetration depths of these refusal sheets varied from -28 feet National Geodetic Vertical Datum (NGVD) to -42 feet NGVD (18 feet to 5 feet from design depth, respectively). During hard driving, the sheets would often fatigue and fail in the vice grips of the vibratory head. The six refusal sheets are marked with the bottom elevation of the sheet (in NGVD) torch-cut into the sheet's top end. The tops of all the sheets, except those in ground elevation transition areas, were left with approximately 2 feet of stickup above the ground surface.

Soil-Bentonite Barrier Wall

The following paragraphs briefly describe the mobilization, site preparation, and installation procedures implemented to install the soil-bentonite portion of the barrier wall.

Mobilization

Specialized equipment mobilized for the construction of the soil-bentonite barrier wall included a long boom excavator allowing excavation to 72 feet below ground surface, a verturi slurry mixer, and a slurry pump. Delivered materials included clay and Naturalgel bentonite (manufactured by Wyo-Ben, Inc.).

Site Preparation

Site preparation involved survey staking of the wall alignment, clearing/grubbing of the work area, construction of a working platform, and excavation of a slurry mixing pond.

Installation

The installation of the soil-bentonite wall consisted of trench excavation, slurry preparation and conveyance, soil-bentonite mixing and placement, verification testing, and protective cap installation.



2. Project Identification

The process of soil-bentonite wall construction is controlled by specific gravities. The excavated trench was held open using a slurry mix of bentonite and water, which was later displaced by the denser soil-bentonite mixture. Upon trench excavation, slurry was pumped from the slurry mixing pond to the trench via conveyance piping (6-inch high-density polyethylene). As the long boom excavator operator advanced along the wall alignment and reached design depth, soil-bentonite mixture was placed within the trench, displacing the slurry. The soil-bentonite mixing operation occurred concurrently with excavation within the interior of the wall's perimeter. The soil-bentonite mixture consisted of soil excavated from the trench, slurry from the trench, imported clays, and dry bentonite. Soil-bentonite mixing and placement were accomplished by excavators and a bulldozer. Following wall installation, in situ performance verification testing was also performed at five locations along the wall alignment. Borings were advanced at each location, from which three soil-bentonite samples were collected at various depths using a California modified split spoon. The samples were then sent to an off-site laboratory for required testing, including sieve analysis, moisture content, Atterberg limits, density, and permeability. All test results were acceptable.

Once installation of the soil-bentonite barrier wall was completed, a protective cap was installed to minimize the potential for soil-bentonite wall desiccation. The cap consisted of at least 5 feet of relatively clean site soil (removed and segregated during the installation procedure) placed above the soil-bentonite wall in lifts and compacted with a roller. Permanent crossings, constructed of steel plates and traffic cones, were also installed at two locations atop the soil-bentonite wall to provide a stable surface for vehicles crossing the wall and to prevent wall damage from vehicle traffic. An approximately 2-foot-high soil berm was also constructed along the entire soil-bentonite wall perimeter to prevent vehicles from crossing the wall outside the permanent crossings.

Additional Activities

Additional activities performed during the construction of the barrier wall included the following:

- Excavation of approximately 1,500 cubic yards of highly contaminated soils from an inoperable interceptor trench, located shoreward and outside the sheet pile wall near the tank farm area, and inside a wooden piling retaining wall. The excavated soils were buried on site in a disposal cell within the barrier wall limits and covered with at least 4 feet of relatively clean site soils. The piling retaining wall was left in place;
- Removal of treated lumber from the shoreline along the Willamette River; and
- Slope stabilization by grading (approximately 2:1) and installation of an erosion control mat along the Willamette River bank for the entire length

of the sheet pile wall.

2.3 Project Initiation and Completion

The project was initiated on January 7, 2003, with the Notice to Proceed to Remtech, Inc., (Remtech) the construction contractor for the Oregon Department of Environmental Quality (DEQ). On-site activities did not begin until March 24, 2003, when Remtech began to mobilize equipment to the site. Actual construction activities commenced on April 1, 2003. In addition, E & E performed a baseline survey on March 29, 2003, to document preconstruction vegetation conditions at the site. On-site construction activities were substantially completed by August 12, 2003, with overall project completion by September 30, 2003.

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3

Baseline Survey

3.1 Vegetation

E & E performed a baseline biological survey on March 29, 2003, to document the existing preconstruction vegetation at the site. Biological conditions observed during and after construction were compared to the baseline conditions to evaluate/identify any impact. This initial biological survey will provide a basis for comparison and evaluation of reclamation success, noting that final reclamation will not occur until after the sediment cap and soil cap are completed at the site.

Before construction, there were three distinct vegetative areas on site: the largest portion of the site (or the upland portion of the site), the riverbank, and the beach or riverfront.

Patches of grasses, Scotch broom, Himalayan blackberry, and a few scattered cottonwoods characterized the upland portion of the site (see Appendix C). This area was reseeded following a soil removal in 1999. Seeds used met the requirements specified in Oregon Department of Transportation Specification 03110.60.

The vegetation along the riverbank was a dense mixture of Scotch broom, Himalayan blackberry, grasses, cottonwoods, and maples. There were also a few willows located near the interceptor trench on the southeast bank.

Along the riverfront, many large and small pieces of wood have been deposited along the project site shoreline. Several of the pieces are large, with root wads attached, but most appear to be relatively transitory, with no development of complex wood structures. However, because of the paucity of large wood pieces in the Lower Willamette River, this material likely provides some complexity and limited refuge during high water events. There is also one snag located on the northwest beach.

3.2 Other Observations

Directly offshore of the northwest beach, an osprey nest was observed on one of the pilings. The nest was still being built at the time of the survey. In addition, one bald eagle was observed flying over the site. No additional threatened, rare or endangered species were observed.

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4

Monitoring Activities

4.1 Biological Monitoring

E & E monitored the contractor's procedures during construction for compliance with the applicable Best Management Practices (BMPs). A complete list of BMPs monitored during construction can be found in the *Pollution Control Plan* and the contract documents (E & E 2002b), and as presented in the contractor's *Construction Operations Plan* (Remtech 2003). The BMPs discussed in this section were monitored by either the oversight crew or the biological monitor daily, as applicable. BMP inspections were recorded on the Daily Biological Monitoring Form and/or the Erosion and Sediment Transport Control Measure Form (Appendices A and B, respectively). Additional observations relative to BMPs were noted by the oversight engineers in the daily construction oversight reports and logbooks.

The following BMPs were monitored daily as necessary (including installation and maintenance activities, where applicable):

- Silt fencing and biobags,
- Boom,
- Mobile fueling activities,
- Dust control, and
- Preservation of existing vegetation.

Silt Fencing and Biobags

Temporary silt fencing and biobag installation began on April 1, 2003, before construction activities located within 100 feet of the beach. Wildlife and environmental conditions caused the silt fencing to be torn and/or punctured consistently. Repairs, which included patching holes with fresh panels of fence and/or re-stapling fencing to existing stakes, were made to the fence as needed.

High water levels on May 28, 2003, reached the silt fence at the northwest beach. E & E informed the contractors and recommended that the silt fence be moved

4. Monitoring Activities

closer inland to avoid further impacts. Although one segment of the silt fence was moved slightly inland, high water levels on June 2, 2003, inundated the silt fence and biobags. E & E recommended complete removal of the silt fence and biobags in areas where construction was no longer active.

Boom

A skirt boom was deployed on April 1, 2003, before construction activities. The boom was moved in accordance with locational changes of construction activities. During the driving of sheet piles, the body of water within and outside the defensive boom was monitored for the presence of any sheen that may be produced as a consequence of sheet pile installation. On several occasions, sheen was observed within the defensive boom during sheet pile operations, and during periods of construction inactivity. Sheen was typically observed during low tides and temperatures greater than 75° Fahrenheit. Sheen was not observed to be a consequence of sheet pile installation activities or other construction activities. Absorbent pads were deployed within the boom area and removed routinely throughout construction. Photographs were taken and are presented in Appendix C.

Mobile Fueling Activities

Proper BMPs were followed. No spills or leaks were observed.

Dust Control

Water was applied as necessary during construction activities to minimize the potential of dust.

Preservation of Existing Vegetation

Along the upland portion of the site, removal of vegetation was limited to those construction areas designated for the slurry trench. Vegetation removal was required along the riverbank for sheet pile operations. Most Himalayan blackberry, Scotch broom, willow, cottonwood, and maple species were removed within the sheet pile operation locations (vegetation located at the top of the bank was crushed as opposed to removed, where feasible). One cottonwood and one snag were left in the northwest portion of the site.

Upon project completion, jute mat was stapled along the bank to minimize erosion impacts.

Most of the pre-existing woody debris that was deposited along the shoreline of the project site was left on the beach. The debris was pushed slightly waterward to make room for the installation of the silt fence. Those pieces that were observed to be contaminated (approximately 20 cubic yards) were removed from the beach to an upland location on site.

4.2 River Stage Monitoring

E & E oversight personnel also monitored the river stage regularly. A site river staff gauge was installed on April 2, 2003, southeast of the project site. River

4. Monitoring Activities

stage levels were measured at low tide daily, using either the site gauge or United States Geological Survey Gauge No. 14211720 (available URL: <http://waterdata.usgs.gov/nwis/sw>), which is located upstream at the Morrison Bridge in Downtown Portland at River Mile 12.8. A correction factor of -0.1 foot was applied to obtain the river stage level adjacent to the McCormick & Baxter site. High tides were also recorded during spring runoff events and periods of seasonal high water and tides. However, because of the changing tide times, it was not always feasible to be at the site during low and/or high tide. All river stage data were documented on the Daily Biological Monitoring Form (see Appendix A), on the daily construction report form, and in the field logbooks.

During high water events, E & E recommended to the contractor to move all materials, including silt fencing, biobags, and equipment, from the water's edge.

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5

Notification of Sick, Injured, or Dead Species

The E & E biological monitor identified two dead fish on the beach during construction activities. Photographs of both species were taken and are included in Appendix C.

One dead Chinook king salmon (*Oncorhynchus tshawytscha*) was found on the morning of April 28, 2003, on the northwest beach approximately 10 feet south-east of Station 12+00. The fish was approximately 33 inches long, and partially decomposed around the eye and jaw area. The specific cause of death is unknown. However, based on the state of decomposition, the fish appeared to have been dead for a day or more.

One dead steelhead (*Oncorhynchus mykiss*) was found on the morning of May 27, 2003, at the northwest beach near STA 10+35. The fish was approximately 28 inches long and in fair condition. The specific cause of death is unknown.

E & E followed the notification procedures outlined in the site-specific *Biological Monitoring and Reporting Plan* (E & E 2003). Initial notification was made to the NOAA Fisheries Law Enforcement Office, Vancouver Field Office, on the same day on which each fish was found. E & E also notified Dr. Nancy Munn of NOAA Fisheries' Oregon Habitat Branch to inform her of the finding. No request to bag and preserve the dead species was made by either party.

No other sick, injured, or dead species were observed during construction activities.

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References

Ecology and Environment, Inc., (E & E) 2003, *Biological Monitoring and Reporting Plan*, submitted to the Oregon Department of Environmental Quality (DEQ), E & E, Portland, Oregon.

_____, 2002a, *Sediment Cap Basis of Design*, submitted to DEQ, E & E, Portland, Oregon.

_____, 2002b, *Contract Documents for Combined Sheet Pile and Soil-Bentonite Barrier Wall*, submitted to DEQ, E & E, Portland, Oregon.

National Oceanic and Atmospheric Administration Fisheries, 2003, *Biological Opinion for Construction of the Barrier Wall at the McCormick and Baxter Creosoting Company Superfund Site, Willamette River, Portland, Oregon*, submitted to the United States Environmental Protection Agency, Oregon Operations Office.

Remtech, Inc., (Remtech) 2003, *Construction Operations Plan for McCormick and Baxter Combined Sheet Pile and Soil-Bentonite Barrier Wall*, submitted to the Oregon Department of Environmental Quality, Remtech, Tacoma, Washington.

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A

Daily Biological Monitoring Forms

Daily Biological Monitoring Form

Monitor's Name: Erin E. Murphy

Date: 04-01-03

Time: 1730

Time(s) of Low Tide: _____

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NVGD):

River stage at site using correction factor (-0.1ft) from Morrison Bridge (ft NVGD):

Staff gauge height at site (ft):

Previous staff gauge height at site (ft):

River level rise (+) or fall (-) rate (ft/hr):

Approximate distance from water to work area (ft):

Elevation of water surface at low tide (ft NVGD):

*Note, NGVD = CRD + 1.74 ft

8.05	time: 1500
7.95	
NA	time:
NA	date/time:
NA	
5 ft	
	time:

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High ☒ Average ☐ Low ☐ Average for rain conditions.

Observable difference in Water Quality near construction area?

Yes

No

Observable sheen in boomed area?

Yes

No

Observable sheen outside boomed area?

Yes

No

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

1 + 00

4 + 00

Approximate location of current sheet pile operation (STA.):

NA

Habitat

Were shoreline features moved or displaced since last monitoring event?

Yes

No

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event?

Yes

No

If yes, did you note time, direction, and location?

Yes

No

Photolog reference numbers:

Camera A, Roll 1, Photo Numbers 9 & 10; Digital Photo Numbers 2, 3, & 5-7

Perimeter Walk

Observations: Some logs were removed from the beach to make room for the silt fence. Logs will be replaced in their approximate location after fence is complete.

Containment boom deployed by west coast marine and cleaning.

Animal Species identified: Several birds on or near site.

Corrective Actions:

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Erin E. Murphy

Date: 04-02-03

Time: 1730

Time(s) of Low Tide: _____

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

8.51 time: 1030

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

8.41

Staff gauge height at site (ft):

5.8 time: 1130

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

8.55

Previous staff gauge elevation at site (ft NGVD):

NA date/time:

River level rise (+) or fall (-) rate (ft/hr):

+0.23 (USGS)

Approximate distance from water to work area (ft):

5

Elevation of water surface at low tide (ft NGVD):

time:

*Note, NGVD = CRD + 1.74 ft

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High ☒ Average ☐ Low ☐ Average for rain conditions.

Observable difference in Water Quality near construction area?

Yes ☐ No ☐

Observable sheen in boomed area?

Yes ☐ No ☐

Observable sheen outside boomed area?

Yes ☐ No ☐

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

1 + 00 4 + 00

Approximate location of current sheet pile operation (STA.):

NA

Habitat

Were shoreline features moved or displaced since last monitoring event? Yes ☐ No ☐

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event? Yes ☐ No ☐

If yes, did you note time, direction, and location? Yes ☐ No ☐

Photolog reference numbers: None

Perimeter Walk

Observations: Staff gauge installed.

Animal Species identified: Several birds on or near site.

Corrective Actions:

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Erin E. Murphy

Date: 04-03-03

Time: 1730

Time(s) of Low Tide: _____

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

8.47

time: 1330

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

8.37

Staff gauge height at site (ft):

5.6

time: 1500

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

8.35

Previous staff gauge elevation at site (ft NGVD):

8.55

date/time: 04-02-03/1130

River level rise (+) or fall (-) rate (ft/hr):

-0.0072

Approximate distance from water to work area (ft):

200

Elevation of water surface at low tide (ft NGVD):

time:

*Note, NGVD = CRD + 1.74 ft

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High

Average

Low

Average for rain conditions.

Observable difference in Water Quality near construction area?

Yes

No

Observable sheen in boomed area?

Yes

No

Observable sheen outside boomed area?

Yes

No

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

1 + 00

4 + 00

Approximate location of current sheet pile operation (STA.):

NA

Habitat

Were shoreline features moved or displaced since last monitoring event?

Yes

No

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event?

Yes

No

If yes, did you note time, direction, and location?

Yes

No

Photolog reference numbers:

None

Perimeter Walk

Observations:

Animal Species identified: Several birds on or near site.

Corrective Actions:

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Erin E. Murphy

Date: 04-07-03

Time: 1730

Time(s) of Low Tide: _____

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

8.00 time: 0800

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

7.90

Staff gauge height at site (ft):

5.4 time: 0800

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

8.15

Previous staff gauge elevation at site (ft NGVD):

8.35 date/time: 04-03-03/1500

River level rise (+) or fall (-) rate (ft/hr):

-0.01176

Approximate distance from water to work area (ft):

15

Elevation of water surface at low tide (ft NGVD):

time:

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High

Average Low

Average for rain conditions.

Observable difference in Water Quality near construction area?

Yes

No

Observable sheen in boomed area?

Yes

No

Observable sheen outside boomed area?

Yes

No

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

1 + 00

4 + 00

Approximate location of current sheet pile operation (STA.):

NA

Habitat

Were shoreline features moved or displaced since last monitoring event?

Yes

No

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event?

Yes

No

If yes, did you note time, direction, and location?

Yes

No

Photolog reference numbers:

Camera B, Roll #1, Photo Numbers 6, 7, 8, 9, & 10.

Perimeter Walk

Observations: Several fishing boats out in the morning. Logs were moved on beach for installation of silt fence. Work was performed between approximate station #'s 1+00 thru 5+00.

Animal Species identified: Several birds on or near site.

Corrective Actions:

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Erin E. Murphy

Date: 04-08-03

Time: 1730

Time(s) of Low Tide: 703

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

Staff gauge height at site (ft):

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

Previous staff gauge elevation at site (ft NGVD):

River level rise (+) or fall (-) rate (ft/hr):

Approximate distance from water to work area (ft):

Elevation of water surface at low tide (ft NGVD):

8.30

time: 0900

8.20

5.65

8.4

8.15

date/time: 04-07-03/0800

+0.01

15

6.3

time: 0703

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High

Average

Low

Observable difference in Water Quality near construction area?

Yes

No

Observable sheen in boomed area?

Yes

No

Observable sheen outside boomed area?

Yes

No

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

1 + 00

6 + 00

Approximate location of current sheet pile operation (STA.):

NA

Habitat

Were shoreline features moved or displaced since last monitoring event?

Yes

No

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event?

Yes

No

If yes, did you note time, direction, and location?

Yes

No

Photolog reference numbers:

Camera A, Roll # 2, Photo # 1; Camera B, Roll # 2, Photos #'s 1 & 2.

Digital photo #19 of boom and #27 of platform.

Perimeter Walk

Observations: Several fishing boats out in the morning. Logs were moved on beach for installation

of silt fence to station 5 + 74. Platform was built along beach from 2 + 50 - 6 + 00. Clearing activities were

performed from approximate station 1 + 00 thru 6 + 00. Additional boom length was added to existing boom

up to station 6 + 00.

Animal Species identified: Several birds on or near site. Two rabbits observed.

Corrective Actions:

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Erin E. Murphy

Date: 04-09-03

Time: 1730

Time(s) of Low Tide: 756

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

7.61 time: 0800

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

7.51

Staff gauge height at site (ft):

4.98

time: 0756

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

7.73

Previous staff gauge elevation at site (ft NGVD):

8.4

date/time: 04-08-03/0900

River level rise (+) or fall (-) rate (ft/hr):

-0.029

Approximate distance from water to work area (ft):

15

Elevation of water surface at low tide (ft NGVD):

7.51

time: 0756

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High

Average

Low

Observable difference in Water Quality near construction area?

Yes

No

Observable sheen in boomed area?

Yes

No

Observable sheen outside boomed area?

Yes

No

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

1 + 00

6 + 00

Approximate location of current sheet pile operation (STA.):

NA

Habitat

Were shoreline features moved or displaced since last monitoring event?

Yes

No

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event?

Yes

No

If yes, did you note time, direction, and location?

Yes

No

Photolog reference numbers:

Digital photo #38

Perimeter Walk

Observations: Several fishing boats out in the morning. Platform re-shaping activities were

performed on beach from station numbers 2 + 50 - 6 + 00.

Silt fence was repaired in areas need at 0945.

Animal Species identified: Several birds on or near site. One river otter sited 50' off shore.

Corrective Actions:

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Andrew Murphy

Date: 04-10-03

Time: 1730

Time(s) of Low Tide: 911

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

7.68 time: 0930

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

7.58

Staff gauge height at site (ft):

5.0

time: 0920

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

7.75

Previous staff gauge elevation at site (ft NGVD):

7.73

date/time: 04-09-03/0746

River level rise (+) or fall (-) rate (ft/hr):

0

Approximate distance from water to work area (ft):

15

Elevation of water surface at low tide (ft NGVD):

17.75

time: 0911

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High

Average

Low

Observable difference in Water Quality near construction area?

Yes

No

Observable sheen in boomed area?

Yes

No

Observable sheen outside boomed area?

Yes

No

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

1 + 00

6 + 00

Approximate location of current sheet pile operation (STA.):

2 + 50

2 + 57

Habitat

Were shoreline features moved or displaced since last monitoring event?

Yes

No

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event?

Yes

No

If yes, did you note time, direction, and location?

Yes

No

Photolog reference numbers:

Perimeter Walk

Observations:

The containment boom may require more anchoring or is dragging one anchor slightly shoreward.

Animal Species identified:

Corrective Actions:

None required.

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Erin Murphy

Date: 04-14-03

Time: 1730

Time(s) of Low Tide: 1352

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

8.00 time: 1400

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

7.90

Staff gauge height at site (ft):

5.4

time: 1352

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

8.15

Previous staff gauge elevation at site (ft NGVD):

7.75

date/time: 04-10-03/0920

River level rise (+) or fall (-) rate (ft/hr):

0.00398

Approximate distance from water to work area (ft):

15

Elevation of water surface at low tide (ft NGVD):

8.15

time: 1352

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High

Average Low

Observable difference in Water Quality near construction area?

Yes

No

Observable sheen in boomed area?

Yes

No

Observable sheen outside boomed area?

Yes

No

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

1 + 00

6 + 00

Approximate location of current sheet pile operation (STA.):

2 + 57

2 + 77

Habitat

Were shoreline features moved or displaced since last monitoring event?

Yes

No

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event?

Yes

No

If yes, did you note time, direction, and location?

Yes

No

Photolog reference numbers:

Camera A, Roll 2, Photo #'s 4-10

Video taken of sheet pile and slurry operations.

Perimeter Walk

Observations:

The containment boom was washed in shore upon arrival. West Coast Marine adjusted boom at approximately 1015 to previous location. Activities on east beach include: sheet pile operation and TM well abandonment.

Activities on west beach include: installation of silt fence (STA 14 + 00- 15 + 00), clearing and grading

(STA 14 + 00 - 16 + 00), and well abandonment (EW-13).

Animal Species identified: Canadian geese, Osprey, Mallards, Crows, blue bird, and one rabbit.

Corrective Actions:

None required.

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Erin Murphy

Date: 04-15-03

Time: 1730

Time(s) of Low Tide: 1442

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

Staff gauge height at site (ft):

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

Previous staff gauge elevation at site (ft NGVD):

River level rise (+) or fall (-) rate (ft/hr):

Approximate distance from water to work area (ft):

Elevation of water surface at low tide (ft NGVD):

8.28 time: 1430

8.18

5.7 time: 1442

8.44

8.15 date/time: 04-14-03/1352

0.011837

15

8.15 time: 1352

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one):

High

Average

Low

Rain

Observable difference in Water Quality near construction area?

Yes

No

Observable sheen in boomed area?

Yes

No

Observable sheen outside boomed area?

Yes

No

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

Approximate location of current sheet pile operation (STA.):

1+00

6+00

2+77

3+15

Habitat

Were shoreline features moved or displaced since last monitoring event?

Yes

No

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event?

Yes

No

If yes, did you note time, direction, and location?

Yes

No

Photolog reference numbers:

Camera A, Roll 2, Photo #'s 11-18

Perimeter Walk

Observations:

Activities on east beach include: sheet pile operation and TM well abandonment.

Activities on west beach include: installation of bio bags along silt fence (STA 14+00- 15+00), construction of platform (STA 15+00 - 16+50). Sewer line locating crew excavated pits along the northwest fence line.

Animal Species identified: Canadian geese, Osprey, Mallards, Gulls, Cormorants and Crows.

Corrective Actions:

None required.

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Erin Murphy

Date: 04-16-03

Time: 1730

Time(s) of Low Tide: 1531

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

9.00 time: 1530

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

8.90

Staff gauge height at site (ft):

5.4

time: 1531

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

8.11

Previous staff gauge elevation at site (ft NGVD):

8.44

date/time: 04-15-03/1442

River level rise (+) or fall (-) rate (ft/hr):

+0.0132

Approximate distance from water to work area (ft):

15

Elevation of water surface at low tide (ft NGVD):

8.11

time: 1531

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one):

High

Average

Low

Observable difference in Water Quality near construction area?

Yes

No

Observable sheen in boomed area?

Yes

No

Observable sheen outside boomed area?

Yes

No

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

1+00

6+00

Approximate location of current sheet pile operation (STA.):

3+15

3+60

Habitat

Were shoreline features moved or displaced since last monitoring event?

Yes

No

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event?

Yes

No

If yes, did you note time, direction, and location?

Yes

No

Photolog reference numbers:

Camera A, Roll 2, Photo #'s 21-23

Camera B, Roll 3, Photo #2 13-14

Perimeter Walk

Observations:

Activities on east beach include: sheet pile construction.

Activities on west beach include: construction of platform (STA 15+00 - 16+50). Well abandonment (EW-6s,

EW-3s). Sewer line locating crew filled in excavated pits and installed sounding tubes along the northwest fence line.

Animal Species identified: Canadian geese, Osprey, Mallards, Gulls, Cormorants, Crows and one bob cat.

Corrective Actions:

None required.

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Erin Murphy

Date: 04-17-03

Time: 1730

Time(s) of Low Tide: 1618

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

Staff gauge height at site (ft):

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

Previous staff gauge elevation at site (ft NGVD):

River level rise (+) or fall (-) rate (ft/hr):

Approximate distance from water to work area (ft):

Elevation of water surface at low tide (ft NGVD):

8.84	time: 1630
8.74	
6.2	time: 1618
8.9	
8.11	date/time: 04-16-03/1531
0.008	
15	
8.9	time: 1618

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one):

High

☒ Average

Low

Observable difference in Water Quality near construction area?

Yes

☒ No

Observable sheen in boomed area?

Yes

☒ No

Observable sheen outside boomed area?

Yes

☒ No

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

Approximate location of current sheet pile operation (STA.):

1+00	6+00
3+60	3+90

Habitat

Were shoreline features moved or displaced since last monitoring event?

Yes

☒ No

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event?

Yes

☒ No

If yes, did you note time, direction, and location?

Yes

☒ No

Photolog reference numbers:

Perimeter Walk

Observations:

Activities on east beach include: sheet pile construction.

Activities on west beach include: construction of platform (STA 15+00 - 16+50). Geo-tech began installation of slope inclinometers (STA 15+75, 18+00).

Animal Species identified: Canadian geese, Osprey, Mallards, Gulls, Cormorants, and Crows.

Corrective Actions:

None required.

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Erin Murphy

Date: 04-21-03

Time: 1730

Time(s) of Low Tide: 633

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

Staff gauge height at site (ft):

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

Previous staff gauge elevation at site (ft NGVD):

River level rise (+) or fall (-) rate (ft/hr):

Approximate distance from water to work area (ft):

Elevation of water surface at low tide (ft NGVD):

8.10	time: 0630
8.00	
6.65	time: 1000 High Tide
9.4	
10.43	date/time: 04-17-03/0722
0.009952	High Tide
15	
8.00	time: 0633 (USGS)

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High

☒ Average ☐ Low

Observable difference in Water Quality near construction area?

Yes

☐ No

Observable sheen in boomed area?

Yes

☐ No

Observable sheen outside boomed area?

Yes

☐ No

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

1+00	6+00
3+60	3+90

Approximate location of current sheet pile operation (STA.):

Habitat

Were shoreline features moved or displaced since last monitoring event?

Yes

☐ No

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event?

☐ Yes

☐ No

If yes, did you note time, direction, and location?

☐ Yes

☐ No

Photolog reference numbers:

Perimeter Walk

Observations:

Activities on east beach include: sheet pile construction.

Activities on west beach include: construction of platform (STA 15+00 - 19+50). Installation of bio bags along silt fence.

Animal Species identified: Canadian geese, Osprey, Mallards, Gulls, Cormorants, and Crows.

Corrective Actions:

None required.

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Erin Murphy

Date: 04-22-03

Time: 1730

Time(s) of Low Tide: 733

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

Staff gauge height at site (ft):

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

Previous staff gauge elevation at site (ft NGVD):

River level rise (+) or fall (-) rate (ft/hr):

Approximate distance from water to work area (ft):

Elevation of water surface at low tide (ft NGVD):

7.73	time: 0730
7.63	
6.00	time: 1057 High Tide
8.75	
9.4	date/time: 04-21-03/1000
-0.026	High Tide
15	
7.63	time: 0633 (USGS)

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one):

High

☒ Average ☐ Low

Observable difference in Water Quality near construction area?

Yes

☐ No

Observable sheen in boomed area?

Yes

☐ No

Observable sheen outside boomed area?

Yes

☐ No

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

Approximate location of current sheet pile operation (STA.):

1+00	6+00
3+90	4+50

Habitat

Were shoreline features moved or displaced since last monitoring event?

Yes

☐ No

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event?

Yes

☐ No

If yes, did you note time, direction, and location?

Yes

☐ No

Photolog reference numbers:

Perimeter Walk

Observations:

Activities on east beach include: sheet pile construction.

Activities on west beach include: Construction of slurry trench.

Animal Species identified: Canadian geese, Osprey, Mallards, Gulls, Cormorants, and Crows.

Corrective Actions:

None required.

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Erin Murphy

Date: 04-23-03

Time: 1730

Time(s) of Low Tide: 840

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

Staff gauge height at site (ft):

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

Previous staff gauge elevation at site (ft NGVD):

River level rise (+) or fall (-) rate (ft/hr):

Approximate distance from water to work area (ft):

Elevation of water surface at low tide (ft NGVD):

7.94	time: 0830
7.84	
5.29	time: 0840 Low Tide
8.04	
8.75	date/time: 04-22-03/1057
+0.0084	(USGS)
15	
8.04	time: 0840 (Site)

High Tide

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High

Average Low

Rain conditions

Observable difference in Water Quality near construction area?

Yes

No

Observable sheen in boomed area?

Yes

No

Observable sheen outside boomed area?

Yes

No

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

1+00

6+00

Approximate location of current sheet pile operation (STA.):

4+50

5+00

Habitat

Were shoreline features moved or displaced since last monitoring event?

Yes

No

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event?

Yes

No

If yes, did you note time, direction, and location?

Yes

No

Photolog reference numbers:

Perimeter Walk

Observations:

Activities on east beach include: sheet pile construction.

Activities on west beach include: Slurry wall construction.

Animal Species identified: Canadian geese, Osprey, Mallards, Gulls, and Crows.

Corrective Actions:

None required.

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Erin Murphy

Date: 04-24-03

Time: 1730

Time(s) of Low Tide: 1000

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

Staff gauge height at site (ft):

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

Previous staff gauge elevation at site (ft NGVD):

River level rise (+) or fall (-) rate (ft/hr):

Approximate distance from water to work area (ft):

Elevation of water surface at low tide (ft NGVD):

NA	time: 1000
#VALUE!	
6.08	time: 1000 Low Tide
8.83	
8.04	date/time: 04-23-03/0840
+0.0316	
15	
8.83	time: 1000 (Site)

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High

Average Low

Observable difference in Water Quality near construction area?

Yes

No

Observable sheen in boomed area?

Yes

No

Observable sheen outside boomed area?

Yes

No

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

1+00 6+00

Approximate location of current sheet pile operation (STA.):

5+00 0

Habitat

Were shoreline features moved or displaced since last monitoring event?

Yes

No

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event?

Yes

No

If yes, did you note time, direction, and location?

Yes

No

Photolog reference numbers:

Perimeter Walk

Observations:

Activities on east beach include: sheet pile construction.

Activities on west beach include: Slurry wall construction.

Animal Species identified: Canadian geese, Osprey, Mallards, Gulls, and Crows.

Corrective Actions:

None required.

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Erin Murphy

Date: 04-28-03

Time: 1730

Time(s) of Low Tide: 1410

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

Staff gauge height at site (ft):

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

Previous staff gauge elevation at site (ft NGVD):

River level rise (+) or fall (-) rate (ft/hr):

Approximate distance from water to work area (ft):

Elevation of water surface at low tide (ft NGVD):

8.09	time: 1400
7.99	
5.49	time: 1410 Low Tide
8.24	
8.83	date/time: 04-24-03/1000
-.0059	
15	
8.24	time: 1000 (Site)

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High ☒ Average ☐ Low ☐

Observable difference in Water Quality near construction area?

Yes ☐ No ☐

Observable sheen in boomed area?

Yes ☐ No ☐

Observable sheen outside boomed area?

Yes ☐ No ☐

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

Approximate location of current sheet pile operation (STA.):

1+00	6+00
5+45	5+80

Habitat

Were shoreline features moved or displaced since last monitoring event?

Yes ☐ No ☐

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event?

Yes ☐ No ☐

If yes, did you note time, direction, and location?

Yes ☐ No ☐

Photolog reference numbers:

Perimeter Walk

Observations:

Activities on east beach include: sheet pile construction.

Activities on west beach include: Slurry wall construction.

Animal Species identified: Canadian geese, Osprey, Mallards, Gulls, and Crows.

Dead Chinook King Salmon (*Oncorhynchus tshawytscha*) identified on the west beach, approximately 10' SE of STA 12+00.

Corrective Actions:

Notifications Made:

Photos were taken of Chinook. Calls were made to both NOAA Law Enforcement and Dr. Nancy Munn of the Oregon NOAA branch. No request was made to preserve/bag dead Chinook.

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Erin Murphy

Date: 04-29-03

Time: 1730

Time(s) of Low Tide: 1452

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

8.41

time: 1430

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

8.31

Staff gauge height at site (ft):

5.78

time: 1452 Low Tide

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

8.53

Previous staff gauge elevation at site (ft NGVD):

8.24

date/time: 04-28-03/1410

River level rise (+) or fall (-) rate (ft/hr):

+0.0118

Approximate distance from water to work area (ft):

15

Elevation of water surface at low tide (ft NGVD):

8.53

time: 1452 (Site)

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High

Average Low

Observable difference in Water Quality near construction area?

Yes

No

Observable sheen in boomed area?

Yes

No

Observable sheen outside boomed area?

Yes

No

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

1+50

7+50

Approximate location of current sheet pile operation (STA.):

5+80

6+25

Habitat

Were shoreline features moved or displaced since last monitoring event?

Yes

No

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event?

Yes

No

If yes, did you note time, direction, and location?

Yes

No

Photolog reference numbers:

Perimeter Walk

Observations:

Activities on east beach include: sheet pile construction.

Activities on west beach include: Slurry wall construction.

Animal Species identified: Canadian geese, Osprey, Mallards, Gulls, and Crows.

Corrective Actions:

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Erin Murphy

Date: 04-30-03

Time: 1730

Time(s) of Low Tide: 1530

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

Staff gauge height at site (ft):

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

Previous staff gauge elevation at site (ft NGVD):

River level rise (+) or fall (-) rate (ft/hr):

Approximate distance from water to work area (ft):

Elevation of water surface at low tide (ft NGVD):

8.54	time: 1530
8.44	
5.90	time: 1530 Low Tide
8.65	
8.53	date/time: 04-29-03/1452
+0.004898	
15	
8.65	time: 1530 (Site)

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High ☒ Average ☐ Low

Observable difference in Water Quality near construction area?

Yes ☐ No ☐

Observable sheen in boomed area?

Yes ☐ No ☐

Observable sheen outside boomed area?

Yes ☐ No ☐

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

1+50 7+50

Approximate location of current sheet pile operation (STA.):

6+42 7+10

Habitat

Were shoreline features moved or displaced since last monitoring event? Yes ☐ No ☐

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event?

Yes ☐ No ☐

If yes, did you note time, direction, and location?

Yes ☐ No ☐

Photolog reference numbers:

Camera A, Roll 3, #s14-17

Perimeter Walk

Observations:

Activities on east beach include: sheet pile construction.

Activities on west beach include: Slurry wall construction. Installation of additional silt fence from approximate

STA 13+00-8+62. Clearing of driftwood from beach, exsisting trees and vegetation took place from

STA 12+50 to 8+82.

Animal Species identified: Canadian geese, Osprey, Mallards, Gulls, and Crows.

Corrective Actions:

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Erin Murphy

Date: 05-01-03

Time: 1730

Time(s) of Low Tide: 1605

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

8.33

time: 1600

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

8.23

Staff gauge height at site (ft):

7.15

time: 1605 Low Tide

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

9.9

Previous staff gauge elevation at site (ft NGVD):

8.65

date/time: 04-30-03/1530

River level rise (+) or fall (-) rate (ft/hr):

+0.004898

Approximate distance from water to work area (ft):

15

Elevation of water surface at low tide (ft NGVD):

8.65

time: 1530 (Site)

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High

Average Low

Observable difference in Water Quality near construction area?

Yes

No

Observable sheen in boomed area?

Yes

No

Observable sheen outside boomed area?

Yes

No

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

1+50

7+50

Approximate location of current sheet pile operation (STA.):

7+10

7+50

Habitat

Were shoreline features moved or displaced since last monitoring event?

Yes

No

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event?

Yes

No

If yes, did you note time, direction, and location?

Yes

No

Photolog reference numbers:

Perimeter Walk

Observations:

Activities on east beach include: sheet pile construction.

Activities on west beach include: Slurry wall construction.

Clearing of existing trees and vegetation took place from STA 12+50 to 8+82. Required bio bags were installed from approximate STA 13+00-8.60.

Animal Species identified: Canadian geese, Osprey, Mallards, Gulls, and Crows.

Corrective Actions:

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Erin Murphy

Date: 05-05-03

Time: 1730

Time(s) of Low Tide: 527

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

Staff gauge height at site (ft):

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

Previous staff gauge elevation at site (ft NGVD):

River level rise (+) or fall (-) rate (ft/hr):

Approximate distance from water to work area (ft):

Elevation of water surface at low tide (ft NGVD):

7.50 time: 0530 Low Tide

7.40

5.89 time: 0846 High Tide

8.64

9.9 date/time: 05-1-03/1605

-0.0088 USGS rate between 05/05/03 and 05/05/03

15

7.40 time: 0530 (USGS)

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High Average

Observable difference in Water Quality near construction area? Yes

Observable sheen in boomed area? Yes

Observable sheen outside boomed area? Yes

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

Approximate location of current sheet pile operation (STA.):

1+50 7+50

7+45 R 7+72 R

Habitat

Were shoreline features moved or displaced since last monitoring event? No

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event? Yes

If yes, did you note time, direction, and location? Yes

Photolog reference numbers:

Perimeter Walk

Observations:

Activities on east beach include: sheet pile construction.

Activities on west beach include: Slurry wall construction.

Clearing of broken concrete, boulders and remaining vegetation took place at STA 8+82.

Animal Species identified: Canadian geese, Osprey, Mallards, Gulls, and Crows.

Corrective Actions:

Notifications Made:

Monitor's Signature:

Daily Biological Monitoring Form

Monitor's Name: Erin Murphy

Date: 05-06-03

Time: 1730

Time(s) of Low Tide: 600

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):
 River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):
 Staff gauge height at site (ft):
 Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)
 Previous staff gauge elevation at site (ft NGVD):
 River level rise (+) or fall (-) rate (ft/hr):
 Approximate distance from water to work area (ft):
 Elevation of water surface at low tide (ft NGVD):

7.48	time: 0600 Low Tide
7.38	
5.80	time: 0922 High Tide
8.55	
8.64	date/time: 05-5-03/846
-0.0037	
15	
7.38	time: 0600 (USGS)

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High Average
 Observable difference in Water Quality near construction area? Yes
 Observable sheen in boomed area? Yes
 Observable sheen outside boomed area? Yes
 If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):
 Approximate location of current sheet pile operation (STA.):

1+50	7+50
7+72 R	7+75 R

Habitat

Were shoreline features moved or displaced since last monitoring event? Yes
 If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event? Yes
 If yes, did you note time, direction, and location? Yes
 Photolog reference numbers:

Perimeter Walk

Observations:
 Activities on east beach include: sheet pile construction.
 Activities on west beach include: Slurry wall construction.
 Sheen appeared on water after jet boat exited bay.

Animal Species identified: Canadian geese, Osprey, Mallards, Gulls, and Crows.

Corrective Actions:

Notifications Made:

Monitor's Signature:

Daily Biological Monitoring Form

Monitor's Name: Erin Murphy

Date: 05-07-03

Time: 1730

Time(s) of Low Tide: 647

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

Staff gauge height at site (ft):

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

Previous staff gauge elevation at site (ft NGVD):

River level rise (+) or fall (-) rate (ft/hr):

Approximate distance from water to work area (ft):

Elevation of water surface at low tide (ft NGVD):

8.44	time: 0700 Low Tide
8.34	
6.40	time: 1000 High Tide
9.15	
8.55	date/time: 05-6-03/0922
+0.0024	
15	
8.34	time: 0700 (USGS)

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High

Average Low

Observable difference in Water Quality near construction area?

Yes

No

Observable sheen in boomed area?

Yes

No

Observable sheen outside boomed area?

Yes

No

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

8+82 14+00

Approximate location of current sheet pile operation (STA.):

7+75 R 8+34 R

Habitat

Were shoreline features moved or displaced since last monitoring event?

Yes

No

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event?

Yes

No

If yes, did you note time, direction, and location?

Yes

No

Photolog reference numbers:

Perimeter Walk

Observations:

Activities on east beach include: Currently there are no activities on the east beach.

Activities on west beach include: Sheet pile operations

Animal Species identified: Canadian geese, Osprey, Mallards, Gulls, and Crows.

Corrective Actions:

Notifications Made:

Monitor's Signature:

Daily Biological Monitoring Form

Monitor's Name: Andrew Murphy and Mike Coenen

Date: 05-08-03

Time: 1730

Time(s) of Low Tide: 744

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):
 River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):
 Staff gauge height at site (ft):
 Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)
 Previous staff gauge elevation at site (ft NGVD):
 River level rise (+) or fall (-) rate (ft/hr):
 Approximate distance from water to work area (ft):
 Elevation of water surface at low tide (ft NGVD):

8.18	time: 0800 Low Tide
8.08	
NA	time: 1059 High Tide
NA	
9.15	date/time: 05-7-03/1000
NA	
15	
NA	time: 0744 (Site)

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High

☒ Average ☐ Low

Observable difference in Water Quality near construction area?

Yes

☐ No

Observable sheen in boomed area?

Yes

☐ No

Observable sheen outside boomed area?

Yes

☐ No

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

8+82 14+00

Approximate location of current sheet pile operation (STA.):

8+34 R 8+58 R

Habitat

Were shoreline features moved or displaced since last monitoring event?

Yes

☐ No

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event?

Yes

☐ No

If yes, did you note time, direction, and location?

Yes

☐ No

Photolog reference numbers:

Perimeter Walk

Observations:

Activities on east beach include: Currently there are no activities on the east beach.

Activities on west beach include: Sheet pile operations

Animal Species identified: Canadian geese, Osprey, Mallards, Gulls, and Crows.

Corrective Actions:

Notifications Made:

Monitor's Signature:

Daily Biological Monitoring Form

Monitor's Name: Erin Murphy

Date: 05-12-03

Time: 1730

Time(s) of Low Tide: 1236

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

Staff gauge height at site (ft):

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

Previous staff gauge elevation at site (ft NGVD):

River level rise (+) or fall (-) rate (ft/hr):

Approximate distance from water to work area (ft):

Elevation of water surface at low tide (ft NGVD):

6.11	time: 1230 Low Tide
6.01	
NA	time:
NA	
6.58	(USGS) 5/11/03, 1130
-0.0228	(USGS) Low Tide
15	
NA	time: 1230 (USGS)

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High Average

Observable difference in Water Quality near construction area? Yes

Observable sheen in boomed area? Yes

Observable sheen outside boomed area? Yes

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

Approximate location of current sheet pile operation (STA.):

8+82	14+00
8+58 R	8+82 R

Habitat

Were shoreline features moved or displaced since last monitoring event? Yes

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event? Yes

If yes, did you note time, direction, and location? Yes

Photolog reference numbers:

Perimeter Walk

Observations:

Activities on east beach include: Currently there are no activities on the east beach.

Activities on west beach include: Sheet pile operations. Boom was washed onto shore over the weekend.

West Coast Marine reset boom at 0930. Staff gage is covered with algal growth, unable to read numbers.

Some sheen observed within the boom at the west beach. E & E will deploy absorbent boom tomorrow.

Animal Species identified: Canadian geese, Osprey, Mallards, Gulls, and Crows.

Corrective Actions: None taken.

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Erin Murphy

Date: 05-13-03

Time: 1730

Time(s) of Low Tide: 1332

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

Staff gauge height at site (ft):

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

Previous staff gauge elevation at site (ft NGVD):

River level rise (+) or fall (-) rate (ft/hr):

Approximate distance from water to work area (ft):

Elevation of water surface at low tide (ft NGVD):

6.17	time: 1330	Low Tide
6.07		
NA	time:	
NA		
6.01	(USGS)	5/12/03, 1230
+0.0064	(USGS)	Low Tide
15		
6.07	time: 1330	(USGS)

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High

Average

Low

Observable difference in Water Quality near construction area?

Yes

No

Observable sheen in boomed area?

Yes

No

Observable sheen outside boomed area?

Yes

No

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

8+82 14+00

Approximate location of current sheet pile operation (STA.):

8+82 R 9+37

Habitat

Were shoreline features moved or displaced since last monitoring event?

Yes

No

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event?

Yes

No

If yes, did you note time, direction, and location?

Yes

No

Photolog reference numbers:

Perimeter Walk

Observations:

Activities on east beach include: Currently there are no activities on the east beach.

Activities on west beach include: Sheet pile operations. Absorbant boom was set in approximate location of observed sheen (west beach).

R=Revised

Animal Species identified: Canadian geese, Osprey, Mallards, Gulls, and Crows.

Corrective Actions: None taken.

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Erin Murphy

Date: 05-14-03

Time: 1730

Time(s) of Low Tide: 1424

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

Staff gauge height at site (ft):

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

Previous staff gauge elevation at site (ft NGVD):

River level rise (+) or fall (-) rate (ft/hr):

Approximate distance from water to work area (ft):

Elevation of water surface at low tide (ft NGVD):

6.96	time: 1430 Low Tide
6.86	
NA	time:
NA	
6.07	(USGS) 5/13/03, 1330
+0.0316	(USGS) Low Tide
15	
6.86	time: 1430 (USGS)

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High Average

Observable difference in Water Quality near construction area? Yes

Observable sheen in boomed area? Yes

Observable sheen outside boomed area? Yes

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

8+82	14+00
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Approximate location of current sheet pile operation (STA.):

9+37	9+92
------	------

Habitat

Were shoreline features moved or displaced since last monitoring event? Yes

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event? Yes

If yes, did you note time, direction, and location? Yes

Photolog reference numbers:

Perimeter Walk

Observations:

Activities on east beach include: Currently there are no activities on the east beach.

Activities on west beach include: Sheet pile operations.

Repaired silt fence with staple gun.

*Unable to read staff gage due to algal growth on the gage. E & E will clean the gage as soon as possible.

Animal Species identified: Canadian geese, Osprey, Mallards, Gulls, and Crows.

Corrective Actions: None taken.

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Erin Murphy

Date: 05-15-03

Time: 1730

Time(s) of Low Tide: 1514

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):
 River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):
 Staff gauge height at site (ft):
 Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)
 Previous staff gauge elevation at site (ft NGVD):
 River level rise (+) or fall (-) rate (ft/hr):
 Approximate distance from water to work area (ft):
 Elevation of water surface at low tide (ft NGVD):

7.96	time: 1530 Low Tide
7.86	
NA	time:
NA	
6.86	(USGS) 5/14/03, 1430
-0.044	(USGS) Low Tide
15	
7.86	time: 1530 (USGS)

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High Average *
 Observable difference in Water Quality near construction area? Yes
 Observable sheen in boomed area? Yes
 Observable sheen outside boomed area? Yes
 If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):
 Approximate location of current sheet pile operation (STA.):

8+82	14+00
9+90 (S)	10+46 (S)

Habitat

Were shoreline features moved or displaced since last monitoring event? Yes
 If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event? Yes
 If yes, did you note time, direction, and location? Yes
 Photolog reference numbers:

Perimeter Walk

Observations:
 Activities on east beach include: Currently there are no activities on the east beach.
 Activities on west beach include: Sheet pile operations.

*Unable to read staff gage due to algal growth on the gage. E & E will clean the gage as soon as possible.

Animal Species identified: Canadian geese, Osprey, Mallards, Gulls, and Crows.

S=Staked

Corrective Actions: None taken.

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Erin Murphy

Date: 05-19-03

Time: 1730

Time(s) of Low Tide: 528

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

Staff gauge height at site (ft):

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

Previous staff gauge elevation at site (ft NGVD):

River level rise (+) or fall (-) rate (ft/hr):

Approximate distance from water to work area (ft):

Elevation of water surface at low tide (ft NGVD):

7.96	time: 0530 Low Tide
7.86	
NA	time:
NA	
8.11	(USGS) 5/18/03, 0430
+0.006	(USGS) Low Tide
15	
7.86	time: 0530 (USGS)

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High Average

Observable difference in Water Quality near construction area? Yes

Observable sheen in boomed area? Yes

Observable sheen outside boomed area? Yes

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

Approximate location of current sheet pile operation (STA.):

8+82	14+00
10+46 (S)	11+00 (S)

Habitat

Were shoreline features moved or displaced since last monitoring event? Yes

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event? Yes

If yes, did you note time, direction, and location? Yes

Photolog reference numbers:

Perimeter Walk

Observations:

Activities on east beach include: Currently there are no activities on the east beach.

Activities on west beach include: Sheet pile operations. Boom was resting on piling about 8" above the water surface. At approximately 1555 boom was reset by E. Murphy.

*Unable to read staff gage due to algal growth on the gage. E & E will clean the gage as soon as possible.

Animal Species identified: Canadian geese, Osprey, Mallards, Gulls, and Crows.

S=Staked

Corrective Actions: None taken.

Note: At approximately 1515 a man fell out of his boat near the site shore. As he called for help E. Murphy paged A. Murphy to bring life vest and oars and T. Feathers called 911. Man is ok.

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Erin Murphy

Date: 05-20-03

Time: 1730

Time(s) of Low Tide: 0622

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

7.77

time: 0630 Low Tide

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

7.67

Staff gauge height at site (ft):

NA

time:

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

NA

Previous staff gauge elevation at site (ft NGVD):

7.86

(USGS) 5/19/03, 0530

River level rise (+) or fall (-) rate (ft/hr):

-0.0076

(USGS) Low Tide

Approximate distance from water to work area (ft):

15

Elevation of water surface at low tide (ft NGVD):

7.67

time: 0630 (USGS)

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one):

High

Average

Low

Observable difference in Water Quality near construction area?

Yes

No

Observable sheen in boomed area?

Yes

No

Observable sheen outside boomed area?

Yes

No

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

8+82

14+00

Approximate location of current sheet pile operation (STA.):

11+00 (S)

11+60 (S)

Habitat

Were shoreline features moved or displaced since last monitoring event?

Yes

No

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event?

Yes

No

If yes, did you note time, direction, and location?

Yes

No

Photolog reference numbers:

Perimeter Walk

Observations:

Activities on east beach include: Currently there are no activities on the east beach.

Activities on west beach include: Sheet pile operations. Repaired silt fence.

*Unable to read staff gage due to algal growth on the gage. E & E will clean the gage as soon as possible.

Animal Species identified: Turkey Vultures, Canadian geese, Osprey, Mallards, Gulls, and Crows.

S=Staked

Corrective Actions: None taken.

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Erin Murphy

Date: 05-21-03

Time: 1730

Time(s) of Low Tide: 0728

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

Staff gauge height at site (ft):

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

Previous staff gauge elevation at site (ft NGVD):

River level rise (+) or fall (-) rate (ft/hr):

Approximate distance from water to work area (ft):

Elevation of water surface at low tide (ft NGVD):

6.99	time: 0730 Low Tide
6.89	
NA	time:
NA	
7.67	(USGS) 5/20/03, 0630
-0.0312	(USGS) Low Tide
15	
6.89	time: 0730 (USGS)

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High

Average

Low

Observable difference in Water Quality near construction area?

Yes

No

Observable sheen in boomed area?

Yes

No

Observable sheen outside boomed area?

Yes

No

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

8+82

14+00

Approximate location of current sheet pile operation (STA.):

11+60 (S)

11+70 (S)

Habitat

Were shoreline features moved or displaced since last monitoring event?

Yes

No

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event?

Yes

No

If yes, did you note time, direction, and location?

Yes

No

Photolog reference numbers:

Perimeter Walk

Observations:

Activities on east beach include: Currently there are no activities on the east beach.

Activities on west beach include: Sheet pile operations. Repaired silt fence.

*Unable to read staff gage due to algal growth on the gage. E & E will clean the gage as soon as possible.

Animal Species identified: Canadian geese, Osprey, Mallards, Gulls, and Crows.

S=Staked

Corrective Actions: None taken.

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Erin Murphy

Date: 05-22-03

Time: 1730

Time(s) of Low Tide: 0830

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

Staff gauge height at site (ft):

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

Previous staff gauge elevation at site (ft NGVD):

River level rise (+) or fall (-) rate (ft/hr):

Approximate distance from water to work area (ft):

Elevation of water surface at low tide (ft NGVD):

7.31	time: 0830 Low Tide
7.21	
NA	time:
NA	
6.89	(USGS) 5/21/03, 0730
+0.0128	(USGS) Low Tide
15	
7.21	time: 0830 (USGS)

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High Average

Observable difference in Water Quality near construction area? Yes

Observable sheen in boomed area? Yes

Observable sheen outside boomed area? Yes

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

Approximate location of current sheet pile operation (STA.):

8+82	14+00
11+70 (S)	12+10 (S)

Habitat

Were shoreline features moved or displaced since last monitoring event? Yes

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event? Yes

If yes, did you note time, direction, and location? Yes

Photolog reference numbers:

Perimeter Walk

Observations:

Activities on east beach include: Currently there are no activities on the east beach. Yesterday evening intercept trench was potholed to determine if contamination could be observed within the trench. A. Murphy supervised this activity.

Activities on west beach include: Sheet pile operations.

*Unable to read staff gage due to algal growth on the gage. E & E will clean the gage as soon as possible.

Animal Species identified: Canadian geese, Osprey, Mallards, Gulls, and Crows.

S=Staked

Corrective Actions: None taken.

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Erin Murphy

Date: 05-27-03

Time: 1730

Time(s) of Low Tide: 1344

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

Staff gauge height at site (ft):

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

Previous staff gauge elevation at site (ft NGVD):

River level rise (+) or fall (-) rate (ft/hr):

Approximate distance from water to work area (ft):

Elevation of water surface at low tide (ft NGVD):

8.19	time: 1330	Low Tide
8.09		
NA	time:	
NA		
6.31	(USGS)	5/26/03, 1300
+0.0727	(USGS)	Low Tide
15		
8.09	time: 1330(USGS)	

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High

Average

Low

Observable difference in Water Quality near construction area?

Yes

No

Observable sheen in boomed area?

Yes

No

Observable sheen outside boomed area?

Yes

No

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

10+25 just west of railroad bridge.

Approximate location of current sheet pile operation (STA.):

12+10 (S) 12+54 (S)

Habitat

Were shoreline features moved or displaced since last monitoring event?

Yes

No

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event?

Yes

No

If yes, did you note time, direction, and location?

Yes

No

Photolog reference numbers:

Camera A, Roll #4, Photo's 10-12

Perimeter Walk

Observations:

Activities on east beach include: Currently there are no activities on the east beach.

Activities on west beach include: Sheet pile operations. A dead *Oncorhynchus mykiss* (Steelhead), approximately 28" in length washed ashore at 0830 this morning, near STA 10+35. Calls were made to both NOAA law enforcement and the Oregon NOAA habitat branch. No request was made to bag or preserve the dead fish.

*Unable to read staff gage due to algal growth on the gage. E & E will clean the gage as soon as possible.

Animal Species identified: Steelhead, Canadian geese, Osprey, Mallards, Gulls, Doves and Crows.

S=Staked

Corrective Actions: Informed NOAA and DEQ, See above

Notifications Made:

NOAA Law enforcement

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Erin Murphy

Date: 05-28-03

Time: 1730

Time(s) of Low Tide: 1426

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

Staff gauge height at site (ft):

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

Previous staff gauge elevation at site (ft NGVD):

River level rise (+) or fall (-) rate (ft/hr):

Approximate distance from water to work area (ft):

Elevation of water surface at low tide (ft NGVD):

10.08	time: 1430	Low Tide
9.98		
7.43	time: 1426	
10.18		
8.09	(USGS)	5/27/03, 1330
+0.0756	(USGS)	Low Tide
15		
10.18	time: 1426	

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High

Average

Low

Observable difference in Water Quality near construction area?

Yes

No

Observable sheen in boomed area?

Yes

No

Observable sheen outside boomed area?

Yes

No

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

Approximate location of current sheet pile operation (STA.):

10+25	just west of railroad bridge.
12+54 (S)	12+99 (S)

Habitat

Were shoreline features moved or displaced since last monitoring event?

Yes

No

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event?

Yes

No

If yes, did you note time, direction, and location?

Yes

No

Photolog reference numbers:

Perimeter Walk

Observations:

Activities on east beach include: Currently there are no activities on the east beach.

Activities on west beach include: Sheet pile operations. Sheen was observed during sheet pile operations at area previously identified as a seep.

NOTE: High tide and spring runoff conditions on site. Water level is past silt fence during high tide and is causing fence to tear in various places.

*Unable to read staff gage due to algal growth on the gage. E & E will clean the gage as soon as possible.

Animal Species identified: Deer, Canadian geese, Osprey, Mallards, Gulls, Doves and Crows.

S=Staked

Corrective Actions: None taken.

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Erin Murphy

Date: 05-29-03

Time: 1730

Time(s) of Low Tide: 1506

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

Staff gauge height at site (ft):

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

Previous staff gauge elevation at site (ft NGVD):

River level rise (+) or fall (-) rate (ft/hr):

Approximate distance from water to work area (ft):

Elevation of water surface at low tide (ft NGVD):

9.25	time: 1500 Low Tide
9.15	
6.60	time: 1506
8.15	
10.18	(USGS) 5/28/03, 1426
+0.08286	
15	
8.15	time: 1506

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one):

High

Average

Low

Observable difference in Water Quality near construction area?

Yes

No

Observable sheen in boomed area?

Yes

No

Observable sheen outside boomed area?

Yes

No

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

Approximate location of current sheet pile operation (STA.):

10+25	just west of railroad bridge.
12+99 (S)	13+37 (S)

Habitat

Were shoreline features moved or displaced since last monitoring event?

Yes

No

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event?

Yes

No

If yes, did you note time, direction, and location?

Yes

No

Photolog reference numbers:

Perimeter Walk

Observations:

Activities on east beach include: Currently there are no activities on the east beach.

Activities on west beach include: Sheet pile operations. Repaired silt fence in areas needed.

NOTE: High tide and spring runoff conditions on site. Water level is past silt fence during high tide and is causing fence to tear in various places.

Animal Species identified: Canadian geese, Osprey, Mallards, Gulls, Doves and Crows.

S=Staked

Corrective Actions: None taken.

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Erin Murphy

Date: 05-30-03

Time: 1730

Time(s) of Low Tide: 1548

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

Staff gauge height at site (ft):

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

Previous staff gauge elevation at site (ft NGVD):

River level rise (+) or fall (-) rate (ft/hr):

Approximate distance from water to work area (ft):

Elevation of water surface at low tide (ft NGVD):

9.97	time: 1530 Low Tide
9.87	
7.40	time: 1548
10.15	
8.15	(USGS) 5/29/03, 1506
+0.081633	
15	
10.15	time: 1530

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High

Average

Low

Observable difference in Water Quality near construction area?

Yes

No

Observable sheen in boomed area?

Yes

No

Observable sheen outside boomed area?

Yes

No

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

10+25 just west of railroad bridge.

Approximate location of current sheet pile operation (STA.):

13+37 (S) 13+90 (S)

Habitat

Were shoreline features moved or displaced since last monitoring event?

Yes

No

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event?

Yes

No

If yes, did you note time, direction, and location?

Yes

No

Photolog reference numbers:

Perimeter Walk

Observations:

Activities on east beach include: Currently there are no activities on the east beach.

Activities on west beach include: Sheet pile operations. Repaired silt fence in areas needed.

NOTE: High tide and spring runoff conditions on site. Water level is past silt fence during high tide and is causing fence to tear in various places.

Animal Species identified: Canadian geese, Osprey, Mallards, Gulls, Doves and Crows.

S=Staked

Corrective Actions: None taken.

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Erin Murphy

Date: 06-02-03

Time: 1730

Time(s) of Low Tide: 1728

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

Staff gauge height at site (ft):

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

Previous staff gauge elevation at site (ft NGVD):

River level rise (+) or fall (-) rate (ft/hr):

Approximate distance from water to work area (ft):

Elevation of water surface at low tide (ft NGVD):

10.48	time: 1730 Low Tide
10.38	
NA	time: After work hours
NA	
11.39	(USGS) 6/01/03, 1700
-0.041	
15	
10.38	time: 1730

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High

Average

Observable difference in Water Quality near construction area?

Yes

Observable sheen in boomed area?

Yes

Observable sheen outside boomed area?

Yes

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

10+25 just west of railroad bridge.

Approximate location of current sheet pile operation (STA.):

13+90 (S) 13+90 (S)

Habitat

Were shoreline features moved or displaced since last monitoring event?

Yes

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event?

Yes

If yes, did you note time, direction, and location?

Yes

Photolog reference numbers:

Perimeter Walk

Observations:

Activities on east beach include: Currently there are no activities on the east beach.

Activities on west beach include: Crane was down. Sheet pile crew went back to STA 8+82 and drove sheets an additional 6". Drilling crews drilled at both the at the bulk head and within the slurry trench.

E & E recommended to Remtech that the silt fencing should be pulled in and left only in the areas crews are currently working. Also recommended that all bio-bags and silt fencing not in use be pulled up onto the site. This was not done. Will talk with Remtech again in the morning.

NOTE: High tide and spring runoff conditions on site. Water level is past silt fence during high tide and is causing fence to tear in various places.

Animal Species identified: Canadian geese, Osprey, Mallards, Gulls, Doves and Crows.

S=Staked

Corrective Actions: None taken.

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Erin Murphy

Date: 06-03-03

Time: 1730

Time(s) of Low Tide: 1800

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

Staff gauge height at site (ft):

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

Previous staff gauge elevation at site (ft NGVD):

River level rise (+) or fall (-) rate (ft/hr):

Approximate distance from water to work area (ft):

Elevation of water surface at low tide (ft NGVD):

9.71	time: 1800 Low Tide
9.61	
NA	time: After work hours
NA	
10.38	(USGS) 6/02/03, 1730
-0.031	
15	
9.61	time: 1730

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High Average

Observable difference in Water Quality near construction area? Yes

Observable sheen in boomed area? Yes

Observable sheen outside boomed area? Yes

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

Approximate location of current sheet pile operation (STA.):

10+25	just west of railroad bridge.
13+90 (S)	14+32 (S)

Habitat

Were shoreline features moved or displaced since last monitoring event? Yes

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event? Yes

If yes, did you note time, direction, and location? Yes

Photolog reference numbers:

Perimeter Walk

Observations:

Activities on east beach include: Currently there are no activities on the east beach.

Activities on west beach include: Crane was down. Sheet pile crew went back to STA 8+82 and drove sheets an additional 6". Drilling crews drilled at both the at the bulk head and within the slurry trench.

E & E recommended to Remtech that the silt fencing should be pulled in and left only in the areas crews are currently working. Also recommended that all bio-bags and silt fencing not in use be pulled up onto the site. This was not done. Will talk with Remtech again in the morning.

NOTE: High tide and spring runoff conditions on site. Water level is past silt fence during high tide and is causing fence to tear in various places.

Animal Species identified: Canadian geese, Osprey, Mallards, Gulls, Doves and Crows.

S=Staked

Corrective Actions: None taken.

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Erin Murphy

Date: 06-04-03

Time: 1730

Time(s) of Low Tide: 1842

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

Staff gauge height at site (ft):

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

Previous staff gauge elevation at site (ft NGVD):

River level rise (+) or fall (-) rate (ft/hr):

Approximate distance from water to work area (ft):

Elevation of water surface at low tide (ft NGVD):

9.12	time: 1900	Low Tide
9.02		
NA	time: After work hours	
NA		
9.61	(USGS)	6/03/03, 1800
-0.0236		
15		
9.02	USGS time: 1900	

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one):

High

Average

Low

Observable difference in Water Quality near construction area?

Yes

No

Observable sheen in boomed area?

Yes

No

Observable sheen outside boomed area?

Yes

No

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

10+25 just west of railroad bridge.

Approximate location of current sheet pile operation (STA.):

14+38 (S) 14+50 (S)

Habitat

Were shoreline features moved or displaced since last monitoring event?

Yes

No

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event?

Yes

No

If yes, did you note time, direction, and location?

Yes

No

Photolog reference numbers:

Perimeter Walk

Observations:

Activities on east beach include: Currently there are no activities on the east beach.

Activities on west beach include: Sheet pile operations.

Animal Species identified: Canadian geese, Osprey, Mallards, Gulls, Doves and Crows.

S=Staked

Corrective Actions: None taken.

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Erin Murphy

Date: 06-05-03

Time: 1730

Time(s) of Low Tide: 1925

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):
 River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):
 Staff gauge height at site (ft):
 Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)
 Previous staff gauge elevation at site (ft NGVD):
 River level rise (+) or fall (-) rate (ft/hr):
 Approximate distance from water to work area (ft):
 Elevation of water surface at low tide (ft NGVD):

1.55	time: 1930 Low Tide
1.45	
NA	time: After work hours
NA	
9.02	(USGS) 6/04/03, 1900
15	
	USGS time: 1930

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High Average

Observable difference in Water Quality near construction area? Yes

Observable sheen in boomed area? Yes

Observable sheen outside boomed area? Yes

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

10+25	just west of railroad bridge.
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Approximate location of current sheet pile operation (STA.):

14+50 (S)	14+ (S)
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Habitat

Were shoreline features moved or displaced since last monitoring event? Yes

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event? Yes

If yes, did you note time, direction, and location? Yes

Photolog reference numbers:

Perimeter Walk

Observations:

Activities on east beach include: Currently there are no activities on the east beach.

Activities on west beach include: Sheet pile operations.

Animal Species identified: Canadian geese, Osprey, Mallards, Gulls, Doves and Crows.

S=Staked

Corrective Actions: None taken.

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Andrew Murphy

Date: 06-09-03

Time: 1530

Time(s) of Low Tide: 1130

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

Staff gauge height at site (ft):

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

Previous staff gauge elevation at site (ft NGVD):

River level rise (+) or fall (-) rate (ft/hr):

Approximate distance from water to work area (ft):

Elevation of water surface at low tide (ft NGVD):

8.35	time: 1130	Low Tide
8.25		
NA	time: Obscured by biological growth	
NA		
9.02	(USGS)	6/04/03, 1900
80		
	USGS time: 1930	

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High Average

Observable difference in Water Quality near construction area? Yes

Observable sheen in boomed area? Yes

Observable sheen outside boomed area? Yes

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

Approximate location of current sheet pile operation (STA.):

10+25	just west of railroad bridge.
14+50 (S)	14+ (S)

Habitat

Were shoreline features moved or displaced since last monitoring event? Yes

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event? Yes

If yes, did you note time, direction, and location? Yes

Photolog reference numbers:

Perimeter Walk

Observations:

Activities on east beach include: Currently there are no activities on the east beach.

Activities on west beach (northwest corner of the site) include: Sheet pile operations.

Animal Species identified: Canadian geese, Osprey, Mallards, Gulls, Doves and Crows.

The Willamette cove has no observable sheen. The containment boom and absorbant boom are secured and anchored.

S=Staked

Corrective Actions: None taken.

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Andrew Murphy

Date: 06-10-03

Time: 1330

Time(s) of Low Tide: *

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

Staff gauge height at site (ft):

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

Previous staff gauge elevation at site (ft NGVD):

River level rise (+) or fall (-) rate (ft/hr):

Approximate distance from water to work area (ft):

Elevation of water surface at low tide (ft NGVD):

*	time: 1130	Low Tide
*		
NA	time: Obscured by biological growth	
NA		
9.02	(USGS)	6/04/03, 1900
NA		
	USGS time: 1930	

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High

Average

Low

Observable difference in Water Quality near construction area?

Yes

No

Observable sheen in boomed area?

Yes

No

Observable sheen outside boomed area?

Yes

No

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

10+25

South of railroad bridge.

Approximate location of current sheet pile operation (STA.):

14+50 (S)

15+ 03(S)

Habitat

Were shoreline features moved or displaced since last monitoring event?

Yes

No

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event?

Yes

No

If yes, did you note time, direction, and location?

Yes

No

Photolog reference numbers:

Perimeter Walk

Observations:

Activities on east beach include: Currently there are no activities on the east beach.

Activities on west beach (northwest corner of the site) include: No activities in beach area

Animal Species identified: Canadian geese, Osprey, Mallards, Gulls, Doves, rabbits, and Crows.

S=Staked

* Not recorded as there was no activity near the river today

Corrective Actions: NA

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Andrew Murphy

Date: 06-11-03

Time: 17:45

Time(s) of Low Tide: 13:30 and 00:00

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

Staff gauge height at site (ft):

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

Previous staff gauge elevation at site (ft NGVD):

River level rise (+) or fall (-) rate (ft/hr):

Approximate distance from water to work area (ft):

Elevation of water surface at low tide (ft NGVD):

8.85	time: 13:30 Low Tide
8.75	
NA	time: Obscured by biological growth
NA	
NA	(USGS) 6/04/03, 1900
80	
	USGS time: 1930

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High Average

Observable difference in Water Quality near construction area? Yes

Observable sheen in boomed area? Yes

Observable sheen outside boomed area? Yes

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

Approximate location of current sheet pile operation (STA.):

10+25	South of railroad bridge.
14+50 (S)	15+ 03(S)

Habitat

Were shoreline features moved or displaced since last monitoring event? Yes

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event? Yes

If yes, did you note time, direction, and location? Yes

Photolog reference numbers:

Perimeter Walk

Observations:

Activities on east beach (south of bulkhead) include: Currently there are no activities on the east beach.

Activities on west beach (North of bulkhead) include: No activity in beach area.

Animal Species identified: Canadian geese, Osprey, Mallards, Gulls, Doves, rabbits, Herons, and Crows.

S=Staked

Corrective Actions: NA

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Andrew Murphy

Date: 06-12-03

Time: 17:45

Time(s) of Low Tide: 13:30 and 00:00

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

Staff gauge height at site (ft):

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

Previous staff gauge elevation at site (ft NGVD):

River level rise (+) or fall (-) rate (ft/hr):

Approximate distance from water to work area (ft):

Elevation of water surface at low tide (ft NGVD):

8.85	time: 13:30 Low Tide
8.75	
NA	time: Obscured by biological growth
NA	
NA	(USGS) 6/04/03, 1900
80	
	USGS time: 1930

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High

Average

Observable difference in Water Quality near construction area?

Yes

Observable sheen in boomed area?

Yes

Observable sheen outside boomed area?

Yes

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

10+25 South of railroad bridge.

Approximate location of current sheet pile operation (STA.):

14+50 (S) 15+ 03(S)

Habitat

Were shoreline features moved or displaced since last monitoring event?

Yes

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event?

Yes

If yes, did you note time, direction, and location?

Yes

Photolog reference numbers: 6/12/03-(14-20) by Andrew Murphy role A3

Perimeter Walk

Observations:

Activities on east beach (south of bulkhead) include: Currently there are no activities on the east beach.

Activities on west beach (North of bulkhead) include: No activity in beach area.

Animal Species identified: Canadian geese, osprey, gulls, doves, herons, turkey vultures, barn swallows, and crows.

Approximately 7 carion eaters, turkey vultures, were utilizing the updrafts along the river bluff and upland bluff to search for food.

S=Staked

Corrective Actions: NA

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Andrew Murphy

Date: 06-16-03

Time: 17:45

Time(s) of Low Tide: 03:30 and 17:30

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

Staff gauge height at site (ft):

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

Previous staff gauge elevation at site (ft NGVD):

River level rise (+) or fall (-) rate (ft/hr):

Approximate distance from water to work area (ft):

Elevation of water surface at low tide (ft NGVD):

7.41	time: 17:30 Low Tide
7.31	
NA	time: Obscured by biological growth
NA	
NA	(USGS) 6/04/03, 1900
120	
7.31	USGS time: 17:30

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High

Average

Observable difference in Water Quality near construction area?

Yes

Observable sheen in boomed area?

Yes

Observable sheen outside boomed area?

Yes

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

10+25 South of railroad bridge.

Approximate location of current sheet pile operation (STA.):

14+50 (S) 15+ 03(S)

Habitat

Were shoreline features moved or displaced since last monitoring event?

Yes

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event?

Yes

If yes, did you note time, direction, and location?

Yes

Photolog reference numbers:

Perimeter Walk

Observations:

Globules observed rising from the river bottom that created a sheen on the river surface. The sheen was approximately 50 yards southeast of the end of the bulkhead. The sheen was observed at approximately low tide (approximately 17:30) and did not appear to be construction related because site operations had stopped for the day.

Activities on west beach (North of bulkhead) include: No activity in beach area.

Animal Species identified: Canadian geese, osprey, gulls, doves, herons, turkey vultures, barn swallows, coyote, and crows.

S=Staked

Corrective Actions:

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Andrew Murphy

Date: 06-17-03

Time: 17:45

Time(s) of Low Tide: 04:00 and 18:30

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

Staff gauge height at site (ft):

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

Previous staff gauge elevation at site (ft NGVD):

River level rise (+) or fall (-) rate (ft/hr):

Approximate distance from water to work area (ft):

Elevation of water surface at low tide (ft NGVD):

8.02

time: 18:30 Low Tide

7.92

NA

time: Obscured by biological growth

NA

NA

(USGS) 6/04/03, 1900

120

7.92

USGS time: 18:30

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High

Average

Low

Observable difference in Water Quality near construction area?

Yes

No

Observable sheen in boomed area?

Yes

No

Observable sheen outside boomed area?

Yes

No

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

10+25

South of railroad bridge.

Approximate location of current sheet pile operation (STA.):

14+50 (S)

15+ 03(S)

Habitat

Were shoreline features moved or displaced since last monitoring event?

Yes

No

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event?

Yes

No

If yes, did you note time, direction, and location?

Yes

No

Photolog reference numbers:

Perimeter Walk

Observations:

Activities on east beach (south of bulkhead) include: Currently there are no activities on the east beach.

Activities on west beach (North of bulkhead) include: No activity in beach area.

Animal Species identified: Canadian geese, osprey, gulls, doves, herons, turkey vultures, barn swallows, and crows.

S=Staked

Corrective Actions: NA

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Mike Coenen

Date: 06-18-03

Time: 17:45

Time(s) of Low Tide: 05:30 and 19:00

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

7.76 time: 19:00 Low Tide

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

7.66

Staff gauge height at site (ft):

NA

time: Obscured by biological growth

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

NA

Previous staff gauge elevation at site (ft NGVD):

NA

(USGS) 6/04/03, 1900

River level rise (+) or fall (-) rate (ft/hr):

Approximate distance from water to work area (ft):

120

Elevation of water surface at low tide (ft NGVD):

7.66

USGS time: 19:00

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High

Average Low

Observable difference in Water Quality near construction area?

Yes

No

Observable sheen in boomed area?

Yes

No

Observable sheen outside boomed area?

Yes

No

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

10+25 South of railroad bridge.

Approximate location of current sheet pile operation (STA.):

14+50 (S) 15+ 03(S)

Habitat

Were shoreline features moved or displaced since last monitoring event?

Yes

No

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event?

Yes

No

If yes, did you note time, direction, and location?

Yes

No

Photolog reference numbers:

Perimeter Walk

Observations:

Activities on east beach (south of bulkhead) include: Currently there are no activities on the east beach.

Activities on west beach (North of bulkhead) include: No activity in beach area.

Animal Species identified: Canadian geese, osprey, gulls, doves, herons, turkey vultures, barn swallows, and crows.

S=Staked

Corrective Actions: NA

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Mike Coenen

Date: 06-19-03

Time: 17:45

Time(s) of Low Tide: 06:00 and 20:00

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):
 River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):
 Staff gauge height at site (ft):
 Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)
 Previous staff gauge elevation at site (ft NGVD):
 River level rise (+) or fall (-) rate (ft/hr):
 Approximate distance from water to work area (ft):
 Elevation of water surface at low tide (ft NGVD):

7.64	time: 20:00 Low Tide
7.54	
NA	time: Obscured by biological growth
NA	
7.76	(USGS) 6/04/03, 1900
0.12	
120	
7.54	USGS time: 17:30

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High

Average

Low

Observable difference in Water Quality near construction area?

Yes

No

Observable sheen in boomed area?

Yes

No

Observable sheen outside boomed area?

Yes

No

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

10+25 South of railroad bridge.

Approximate location of current sheet pile operation (STA.):

14+50 (S) 15+ 03(S)

Habitat

Were shoreline features moved or displaced since last monitoring event?

Yes

No

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event?

Yes

No

If yes, did you note time, direction, and location?

Yes

No

Photolog reference numbers:

Perimeter Walk

Observations:

Globules rising from the river bottom, followed by a sheen on the river surface was observed approximately 50 yards SE of the bulkhead. E&E took digital photographs to document the sheen. The globules did not appear construction related as they were observed approximately 630 feet from sheetpile activities and approximately 2-hours from the last attempt to drive sheetpile. However, the tide was nearing its lowest point of the day.

Activities on west beach (North of bulkhead) include: No activity in beach area.

Animal Species identified: Canadian geese, osprey, gulls, doves, herons, turkey vultures, barn swallows, coyote, and crows.

S=Staked

Corrective Actions:

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Andrew Murphy

Date: 06-23-03

Time: All day

Time(s) of Low Tide: 11:00

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

Staff gauge height at site (ft):

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

Previous staff gauge elevation at site (ft NGVD):

River level rise (+) or fall (-) rate (ft/hr) using Morrison Bridge gauge:

Approximate distance from water to work area (ft):

4.88	time: 11:00 Low Tide
4.78	
NA	Below staff gauge
NA	
NA	
-2.86	
40	

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High

Average

Low

Observable difference in Water Quality near construction area?

Yes

No

Observable sheen in boomed area?

Yes

No

Observable sheen outside boomed area?

Yes

No

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

5+50

50 feet beyond STA 1+52

Approximate location of current sheet pile operation (STA.):

2+50

Habitat

Were shoreline features moved or displaced since last monitoring event?

Yes

No

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event?

Yes

No

If yes, did you note time, direction, and location?

Yes

No

Photolog reference numbers:

Perimeter Walk

Observations:

Sheet pile driving operation moved to the south end and WCMC has moved the containment boom.

Activities on west beach (North of bulkhead) include: No activity in beach area.

Animal Species identified: Canadian geese, osprey, gulls, doves, herons, turkey vultures, barn swallows, coyote, and crows.

S=Staked

Corrective Actions:

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Andrew Murphy

Date: 06-24-03

Time: All day

Time(s) of Low Tide: 11:00

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

Staff gauge height at site (ft):

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

Previous staff gauge elevation at site (ft NGVD):

River level rise (+) or fall (-) rate (ft/hr) using Morrison Bridge gauge:

Approximate distance from water to work area (ft):

4.62
4.52
NA
NA
NA
-0.36
70

time: 11:00 Low Tide

Below staff gauge

Not significant as water is low.

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High

Average

Low

Observable difference in Water Quality near construction area?

Yes

No

Observable sheen in boomed area?

Yes

No

Observable sheen outside boomed area?

Yes

No

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

5+50

50 feet beyond STA 1+52

Approximate location of current sheet pile operation (STA.):

15+00

Habitat

Were shoreline features moved or displaced since last monitoring event?

Yes

No

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event?

Yes

No

If yes, did you note time, direction, and location?

Yes

No

Photolog reference numbers:

Perimeter Walk

Observations:

Activities on west beach (North of bulkhead) include: No activity in beach area.

Animal Species identified: Canadian geese, osprey, gulls, herons, barn swallows, and crows.

S=Staked

Corrective Actions:

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Andrew Murphy

Date: 06-25-03

Time: All day

Time(s) of Low Tide: 0

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

Staff gauge height at site (ft):

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

Previous staff gauge elevation at site (ft NGVD):

River level rise (+) or fall (-) rate (ft/hr) using Morrison Bridge gauge:

Approximate distance from water to work area (ft):

See Note

Note: Gauge malfunctioning and no data available.

NA

Below staff gauge

NA

NA

NA

Not significant as water is low.

NA

70

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High

Average

Low

Observable difference in Water Quality near construction area?

Yes

No

Observable sheen in boomed area?

Yes

No

Observable sheen outside boomed area?

Yes

No

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

5+50

50 feet beyond STA 1+52

Approximate location of current sheet pile operation (STA.):

15+00

Habitat

Were shoreline features moved or displaced since last monitoring event?

Yes

No

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event?

Yes

No

If yes, did you note time, direction, and location?

Yes

No

Photolog reference numbers:

DSN 288,289, and 290 by AIM

Perimeter Walk

Observations:

1. Bubble and visible rainbow sheen observed approximately 75-feet off bulkhead. Photos through filter lense were taken as requested by DEQ.

2. The fledgling osprey appear to be about half the size of their parents.

Activities on west beach (North of bulkhead) include: No activity in beach area.

Animal Species identified: Canadian geese, osprey, gulls, and crows.

S=Staked

Corrective Actions:

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Andrew Murphy

Date: 06-26-03

Time(s) of Low Tide: 13:30

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

Staff gauge height at site (ft):

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

Previous staff gauge elevation at site (ft NGVD):

River level rise (+) or fall (-) rate (ft/hr) using Morrison Bridge gauge:

Approximate distance from water to work area (ft):

5.31
NA
NA
NA
NA
NA
90

Below staff gauge

Not significant as water is low.

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High

Average

Low

Observable difference in Water Quality near construction area?

Observable sheen in boomed area?

Observable sheen outside boomed area?

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

Yes	No
Yes	No
Yes	No

In-water Controls

Approximate location of boom (STA. To STA.):

Approximate location of current sheet pile operation (STA.):

5+50	9+00
Bulkhead	

Habitat

Were shoreline features moved or displaced since last monitoring event?

Yes

No

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event?

Yes

No

If yes, did you note time, direction, and location?

Yes

No

Photolog reference numbers:

Perimeter Walk

Observations:

WCMC moved the containment boom (AM) to encompass bulkhead area for last attempt at refusals.

Activities on west beach (North of bulkhead) include: No activity in beach area.

Animal Species identified: Canadian geese, osprey, gulls, and crows.

S=Staked

Corrective Actions:

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Andrew Murphy

Date: 06-30-03

Time: All day

Time(s) of Low Tide: 9:36

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

Staff gauge height at site (ft):

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

Previous staff gauge elevation at site (ft NGVD):

River level rise (+) or fall (-) rate (ft/hr) using Morrison Bridge gauge:

Approximate distance from water to work area (ft):

5.09
4.99
NA
NA
NA
NA
70

Below staff gauge

Not significant as water is low.

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High

Average

Low

Observable difference in Water Quality near construction area?

Observable sheen in boomed area?

Observable sheen outside boomed area?

Yes	No
Yes	No
Yes	No

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

Approximate location of current sheet pile operation (STA.):

5+50	9+00
Bulkhead	

Habitat

Were shoreline features moved or displaced since last monitoring event?

Yes

No

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event?

Yes

No

If yes, did you note time, direction, and location?

Yes

No

Photolog reference numbers:

Perimeter Walk

Observations:

Began excavated source area (interceptor trench) and transporting spoils into disposal cell within the barrier wall.

Activities on west beach (North of bulkhead) include: No activity in beach area.

Animal Species identified: Canadian geese, osprey, gulls, and crows.

S=Staked

Corrective Actions:

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Andrew Murphy

Date: 07/01/03

Time: All day

Time(s) of Low Tide:

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):
 River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):
 Staff gauge height at site (ft):
 Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)
 Previous staff gauge elevation at site (ft NGVD):
 River level rise (+) or fall (-) rate (ft/hr) using Morrison Bridge gauge:
 Approximate distance from water to work area (ft):

4.62	time: Low Tide
4.52	
NA	Below staff gauge
NA	
NA	
NA	
60	

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High

Average

Observable difference in Water Quality near construction area?

No

Observable sheen in boomed area?

No

Observable sheen outside boomed area?

No

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

Approximate location of current sheet pile operation (STA.):

--	--

Habitat

Were shoreline features moved or displaced since last monitoring event?

Yes

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event?

No

If yes, did you note time, direction, and location?

No

Photolog reference numbers:

Perimeter Walk

Observations: Activities included removing rocks and gravel from interceptor trench.

Activities on west beach (North of bulkhead) include: No activity in beach area.

Animal Species identified: Osprey, gulls, and crows.

S=Staked

Corrective Actions:

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Andrew Murphy

Date: 07/02/03

Time: all day

Low Tide during work activity:

17:45

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

Staff gauge height at site (ft):

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

Previous staff gauge elevation at site (ft NGVD):

River level rise (+) or fall (-) rate (ft/hr) using Morrison Bridge gauge:

Approximate distance from water to work area (ft):

4.57	Low Tide
4.47	
NA	Below staff gauge
NA	
NA	
-0.15	
40	

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High

Average

Observable difference in Water Quality near construction area?

Observable sheen in boomed area?

Observable sheen outside boomed area?

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

Approximate location of current sheet pile operation (STA.):

Habitat

Were shoreline features moved or displaced since last monitoring event?

Yes

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event?

Yes

If yes, did you note time, direction, and location?

Yes

Photolog reference numbers:

Perimeter Walk

Observations:

Near beach activities today were focused on the excavation of source area from the interceptor trench.

Activities on west beach (North of bulkhead) include: No activity in beach area.

Animal Species identified: Osprey, gulls, and crows.

S=Staked

Corrective Actions:

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Andrew Murphy

Date: 07/03/03

Time(s) of Low Tide: 1

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

3.51 Low Tide

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

3.41

Staff gauge height at site (ft):

NA

Below staff gauge

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

NA

Previous staff gauge elevation at site (ft NGVD):

NA

River level rise (+) or fall (-) rate (ft/hr) using Morrison Bridge gauge:

-1.16

Approximate distance from water to work area (ft):

80

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High

Average

Low

Observable difference in Water Quality near construction area?

Yes

No

Observable sheen in boomed area?

Yes

No

Observable sheen outside boomed area?

Yes

No

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

5+50

50 feet beyond STA 1+52

Approximate location of current sheet pile operation (STA.):

completed

Habitat

Were shoreline features moved or displaced since last monitoring event?

Yes

No

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event?

Yes

No

If yes, did you note time, direction, and location?

Yes

No

Photolog reference numbers:

Perimeter Walk

Observations:

Activities on west beach (North of bulkhead) include: No activity in beach area.

Animal Species identified: Osprey, gulls, and crows.

S=Staked

Corrective Actions:

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Andrew Murphy

Date: 07/7/03

Time(s) of Low Tide: 9:00

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

3.32 Low Tide

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

3.22

Staff gauge height at site (ft):

NA Below staff gauge

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

NA

Previous staff gauge elevation at site (ft NGVD):

NA

River level rise (+) or fall (-) rate (ft/hr) using Morrison Bridge gauge:

NA Not significant as water level is very low.

Approximate distance from water to work area (ft):

50

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High

Average Low

Observable difference in Water Quality near construction area?

Yes

No

Observable sheen in boomed area?

Yes

No

Observable sheen outside boomed area?

Yes

No

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

5+50 50 feet beyond STA 1+52

Approximate location of current sheet pile operation (STA.):

completed

Habitat

Were shoreline features moved or displaced since last monitoring event?

Yes

No

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event?

Yes

No

If yes, did you note time, direction, and location?

Yes

No

Photolog reference numbers:

Perimeter Walk

Observations:

Activities on west beach (North of bulkhead) include: No activity in beach area.

Animal Species identified: Osprey, American Kestrel (small falcon), gulls, and crows.

S=Staked

Corrective Actions:

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Andrew Murphy

Date: 07/08/03

Time(s) of Low Tide: 0

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):
 River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):
 Staff gauge height at site (ft):
 Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)
 Previous staff gauge elevation at site (ft NGVD):
 River level rise (+) or fall (-) rate (ft/hr) using Morrison Bridge gauge:
 Approximate distance from water to work area (ft):

3.74	Low Tide
3.64	
NA	Below staff gauge
NA	
NA	
0.42	Not significant as water level is very low.
50	

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High Average
 Observable difference in Water Quality near construction area? Yes
 Observable sheen in boomed area? Yes
 Observable sheen outside boomed area? Yes
 If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):
 Approximate location of current sheet pile operation (STA.):

Habitat

Were shoreline features moved or displaced since last monitoring event? Yes
 If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event? Yes
 If yes, did you note time, direction, and location? Yes

Photolog reference numbers:

Perimeter Walk

Observations:
 Activities on west beach (North of bulkhead) include: No activity in beach area.

Animal Species identified: Osprey, American Kestrel (small falcon), gulls, and crows.

S=Staked

Corrective Actions:

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Andrew Murphy

Date: 07/09/03

Time(s) of Low Tide: 11:30

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

Staff gauge height at site (ft):

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

Previous staff gauge elevation at site (ft NGVD):

River level rise (+) or fall (-) rate (ft/hr) using Morrison Bridge gauge:

Approximate distance from water to work area (ft):

3.60	Low Tide
3.50	
NA	Below staff gauge
NA	
NA	
-0.14	Not significant as water level is very low.
50	

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High Average

Observable difference in Water Quality near construction area? Yes

Observable sheen in boomed area? Yes

Observable sheen outside boomed area? Yes

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

Approximate location of current sheet pile operation (STA.):

5+50	50 feet beyond STA 1+52
completed	

Habitat

Were shoreline features moved or displaced since last monitoring event? Yes

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event? Yes

If yes, did you note time, direction, and location? Yes

Photolog reference numbers:

Perimeter Walk

Observations:

Activities on west beach (North of bulkhead) include: No activity in beach area.

Animal Species identified: Osprey, American Kestrel (small falcon), gulls, and crows.

S=Staked

Corrective Actions:

Notifications Made:

Monitor's Signature: _____

Daily Biological Monitoring Form

Monitor's Name: Andrew Murphy

Date: 07/14/03

Time(s) of Low Tide:

River Stage and Observations

USGS river stage at Morrison Bridge from gauge #14211720 (ft NGVD):

River stage at site using correction factor (-0.1 ft) from Morrison Bridge (ft NGVD):

Staff gauge height at site (ft):

Staff gauge elevation at site (= gauge height + 2.75)(ft NGVD)

Previous staff gauge elevation at site (ft NGVD):

River level rise (+) or fall (-) rate (ft/hr) using Morrison Bridge gauge:

Approximate distance from water to work area (ft):

4.52	Low Tide
4.42	
NA	Below staff gauge
NA	
NA	
NA	Not significant as water level is very low.
50	

Water Quality Observations of Willamette River

Qualitative turbidity observation main channel away from site (circle one): High

Average

Low

Observable difference in Water Quality near construction area?

Yes

No

Observable sheen in boomed area?

Yes

No

Observable sheen outside boomed area?

Yes

No

If the answer was yes to any of the above, complete Observations and Corrective Actions, below.

In-water Controls

Approximate location of boom (STA. To STA.):

5+50 50 feet beyond STA 1+52

Approximate location of current sheet pile operation (STA.):

completed

Habitat

Were shoreline features moved or displaced since last monitoring event?

Yes

No

If yes, document with pictures and describe in Observations and Corrective Actions, below.

Photo Documentation

Were photographs taken during monitoring event?

Yes

No

If yes, did you note time, direction, and location?

Yes

No

Photolog reference numbers:

Perimeter Walk

Observations:

Activities on west beach (North of bulkhead) include: No activity in beach area.

Animal Species identified: Osprey, American Kestrel (small falcon), gulls, and crows.

S=Staked

Corrective Actions:

Notifications Made:

Monitor's Signature: _____

Date	Time	Low Tide	Adjusted (+2.75)	High Tide	Adjusted (+2.75)	Some where in between	Adjusted (+2.75)	Complete record (adjusted)
4/2/2003	1100					5.80	8.55	8.55
4/3/2003	1500					5.60	8.35	8.35
4/7/2003	810					5.40	8.15	8.15
4/8/2003	900					5.65	8.40	8.40
4/9/2003	756	4.98	7.73					7.73
4/14/2003	1352	5.40	8.15					8.15
4/15/2003	1442	5.69	8.44					8.44
4/16/2003	1531	5.36	8.11					8.11
4/17/2003	1618	6.15	8.9					8.90
4/21/2003	930			6.65	9.4			9.40
4/22/2003	1057			6.00	8.75			8.75
4/23/2003	840	5.29	8.04					8.04
4/24/2003	1000	6.08	8.83					8.83
4/28/2003	1410	5.49	8.24					8.24
4/29/2003	1452	5.78	8.53					8.53
4/30/2003	1530	5.90	8.65					8.65
5/1/2003	701			6.88	9.63			9.63
	1605	5.60	8.35					5.60
5/5/2003	846			5.89	8.64			8.64
5/6/2003	922			5.80	8.55			8.55
5/7/2003	1000			6.40	9.15			9.15
5/28/2003	1426	7.43	10.18					10.18
5/29/2003	1506	6.6	9.35					9.35
5/30/2003	1548	7.4	10.15					10.15
6/2/2003	800			8.8	11.55			11.55
6/3/2003	825			7.8	10.55			10.55
6/4/2003	910			7.38	10.13			10.13

B

Erosion and Sediment Transport Control Measure Forms

Erosion and Sediment Transport Control Measures Inspection Form

Date: 04-01-03

Time: 1730

Name of E & E monitor: Erin E. Murphy

Current weather conditions: Cool, high winds, off and on rain

Last 24 Hr weather conditions: Same as above

DEQ BMP Designation	BMP Name	Inspection Time(s)	Date and Time of last Inspection Time(s)	Minimum Inspection Frequency	Description of BMP	Observations (Effectiveness)
BMP #4	Preserve Existing Vegetation	9:00, 17:10	First Inspection	Weekly or after .5 inch or greater rain event.	Preserving natural habitat to the greatest extent possible. Preserve in clumps or as individual trees. Using safety fence or flagging to delineate prior to commencing work. Delineate work extent.	Limited clearing in work areas. No adverse impacts observed.
BMP # 8	Plastic Sheeting of stockpiles or temporary protection of disturbed areas	1700	First Inspection	Weekly or after .5 inch or greater rain event.	Ensure plastic sheeting is covering all soil stockpiles. Look for rips tears on the surface and runoff seeps under matting. Plastic should be anchored w/10' grid spacing using sandbags or suitable system. Minimum 12" overlap of all seams required. Barrier required @ toe of stock pile.	Contractor begins covering soil stockpiles at 1650. Sand bags were unavailable and ends were buried instead.
BMP # 11	Gravel Construction Entrance	1710	First Inspection	Daily	There should be no sediment, rock or woodchip on paved surfaces.	Wash area is still being established. Crews have swept area.
BMP #13	Dust Control	900	First Inspection	Continual	Apply water or controls as needed. Keep vehicular traffic in current construction areas and established access routes.	Rain has been off and on throughout the day therefore water controls are not necessary.
BMP # 28	Compost Sock			Weekly or after .5 inch or greater rain event.	May be utilized as a check dam and is not efficient for turbidity or suspended solids. When utilized as check dam, they must be staked. May have down stream skirt for undercut protection.	
BMP	Bio-filter	1130, 1700	First Inspection	Weekly or after .5 inch or greater rain event.	Bags should be overlapped by 6". 2 stakes should support each bag. Check for undercutting or end-flow. Inspect for tears and damage. Sediment should not be greater than 1/3 the height of bag.	Bags are being used in conjunction with the silt fence. Stakes are installed behind fence only. Bags are installed correctly. We have recommended that Remtech use either check dams or straw along southern edge of fence, where foot path has formed.
BMP #29	Sediment Fence	1130, 1700	First Inspection	Weekly or after .5 inch or greater rain event.	Ensure bottom of fence is not visible and fence is taut. Posts should be a maximum of 6' apart. At termination point, fence should be facing uphill. Fence should not exceed 3' and storage should not exceed 1.5'. Check for channel formation parallel to fence, look for under cutting and clogged geotextile.	Fence secured with staples rather than woven pockets. Posts installed down slope, as shown on the plans.
BMP Type 1 temporary	Tire Wash	0830, 1130, 1700	First Inspection	Weekly or more frequent during high demand	Dimensions: 40' long x 10' wide X 18" sump with 50' run out. Ensure wash water drainage/collection and treatment system is functioning and/or frequent water replacement.	Construction crews are utilizing existing tire wash. Excess water will be discharged on-site in an upland area.
BMP	Mobile Fueling of Vehicles and Heavy Equipment		Has not been observed.	During fueling operations	Ensure compliance with local and state regulations. Request documentation for 49 CFR 178 for DOT 406. Specifics too numerous to summarize, refer to BMP.	Has not been observed.

Signature of monitor: _____

Erosion and Sediment Transport Control Measures Inspection Form

Date: 04-02-03

Name of E & E monitor: Erin E. Murphy

Current weather conditions: Cool with high winds, off and on rain.

Last 24 Hr weather conditions: Same as above

DEQ BMP Designation	BMP Name	Inspection Time(s)	Date and Time of last Inspection Time(s)	Minimum Inspection Frequency	Description of BMP	Observations (Effectiveness)
BMP #4	Preserve Existing Vegetation	Continual		Weekly or after .5 inch or greater rain event.	Preserving natural habitat to the greatest extent possible. Preserve in clumps or as individual trees. Using safety fence or flagging to delineate prior to commencing work. Delineate work extent.	Limited clearing in work areas. No adverse impacts observed.
BMP # 8	Plastic Sheeting of stockpiles or temporary protection of disturbed areas	1600		Weekly or after .5 inch or greater rain event.	Ensure plastic sheeting is covering all soil stockpiles. Look for rips tears on the surface and runoff seeps under matting. Plastic should be anchored w/10' grid spacing using sandbags or suitable system. Minimum 12" overlap of all seams required. Barrier required @ toe of stock pile.	No changes from previous inspection.
BMP # 11	Gravel Construction Entrance	1500		Daily	There should be no sediment, rock or woodchip on paved surfaces.	Area should be swept at end of day. Contractor plans to place rip-rap at entrance.
BMP #13	Dust Control	N/A		Continual	Apply water or controls as needed. Keep vehicular traffic in current construction areas and established access routes.	N/A (Rain)
BMP # 28	Compost Sock	N/A (not installed)		Weekly or after .5 inch or greater rain event.	May be utilized as a check dam and is not efficient for turbidity or suspended solids. When utilized as check dam, they must be staked. May have down stream skirt for undercut protection.	Not installed.
BMP	Bio-filter	1400		Weekly or after .5 inch or greater rain event.	Bags should be overlapped by 6". 2 stakes should support each bag. Check for undercutting or end-flow. Inspect for tears and damage. Sediment should not be greater than 1/3 the height of bag.	Check dams have been placed along southern edge of fence.
BMP #29	Sediment Fence	1600		Weekly or after .5 inch or greater rain event.	Ensure bottom of fence is not visible and fence in taut. Posts should be a maximum of 6' apart. At termination point, fence should be facing uphill. Fence should not exceed 3' and storage should not exceed 1.5'. Check for channel formation parallel to fence, look for under cutting and clogged geotextile.	Temporary fence continues to be installed.
BMP Type 1 temporary	Tire Wash	1600		Weekly or more frequent during high demand	Dimensions: 40' long x 10' wide X 18" sump with 50' run out. Ensure wash water drainage/collection and treatment system is functioning and/or frequent water replacement.	Recommend pumping of collected water and removal of sediments.
BMP	Mobile Fueling of Vehicles and Heavy Equipment			During fueling operations	Ensure compliance with local and state regulations. Request documentation for 49 CFR 178 for DOT 406. Specifics too numerous to summarize, refer to BMP.	Mobile fueling will take place at 5:30am, today's fueling not observed.

Signature of monitor: _____

Erosion and Sediment Transport Control Measures Inspection Form

Date: 04-03-03

Name of E & E monitor: Erin E. Murphy

Current weather conditions: Cool with high winds, off and on rain.

Last 24 Hr weather condition: Same as above

DEQ BMP Designation	BMP Name	Inspection Time(s)	Date and Time of last Inspection Time(s)	Minimum Inspection Frequency	Description of BMP	Observations (Effectiveness)
BMP #4	Preserve Existing Vegetation	Continual		Weekly or after .5 inch or greater rain event.	Preserving natural habitat to the greatest extent possible. Preserve in clumps or as individual trees. Using safety fence or flagging to delineate prior to commencing work. Delineate work extent.	Limited clearing in work areas. No adverse impacts observed.
BMP # 8	Plastic Sheeting of stockpiles or temporary protection of disturbed areas	0700, 930, 1130, 1600, 1710		Weekly or after .5 inch or greater rain event.	Ensure plastic sheeting is covering all soil stockpiles. Look for rips tears on the surface and runoff seeps under matting. Plastic should be anchored w/10' grid spacing using sandbags or suitable system. Minimum 12" overlap of all seams required. B	No changes from previous inspection.
BMP # 11	Gravel Construction Entrance	0700, 1130, 1300, 1600, 1710		Daily	There should be no sediment, rock or woodchip on paved surfaces.	Area should be swept at end of day. Contractor placed 2"-4" quarry spalls on gravel entrance near decon pad.
BMP #13	Dust Control	N/A		Continual	Apply water or controls as needed. Keep vehicular traffic in current construction areas and established access routes.	Rained off and on.
BMP # 28	Compost Sock	N/A (not installed)		Weekly or after .5 inch or greater rain event.	May be utilized as a check dam and is not efficient for turbidity or suspended solids. When utilized as check dam, they must be staked. May have down stream skirt for undercut protection.	Not installed.
BMP	Bio-filter	0700, 1130, 1600		Weekly or after .5 inch or greater rain event.	Bags should be overlapped by 6". 2 stakes should support each bag. Check for undercutting or end-flow. Inspect for tears and damage. Sediment should not be greater than 1/3 the height of bag.	Additional bio-bags need to be placed along silt fence where missing.
BMP #29	Sediment Fence	0700, 1600		Weekly or after .5 inch or greater rain event.	Ensure bottom of fence is not visible and fence is taut. Posts should be a maximum of 6' apart. At termination point, fence should be facing uphill. Fence should not exceed 3' and storage should not exceed 1.5'. Check for channel formation parallel to	Fence is in good condition.
BMP Type 1 temporary	Tire Wash	0700, 1130, 1600		Weekly or more frequent during high demand	Dimensions: 40' long x 10' wide X 18" sump with 50' run out. Ensure wash water drainage/collection and treatment system is functioning and/or frequent water replacement.	Recommend pumping of collected water and removal of sediments.
BMP	Mobile Fueling of Vehicles and Heavy Equipment	630		During fueling operations	Ensure compliance with local and state regulations. Request documentation for 49 CFR 178 for DOT 406. Specifics too numerous to summarize, refer to BMP.	Did not use secondary measures to collect drips beneath nozzles. Spill kits were located nearby, and three personnel supervised the activity.

Signature of monitor: _____

Erosion and Sediment Transport Control Measures Inspection Form

Date: 04-07-03

Name of E & E monitor: Erin E. Murphy

Current weather conditions: Cool with moderate winds, off and on rain.

Last 24 Hr weather condition: Same as above

DEQ BMP Designation	BMP Name	Inspection Time(s)	Date and Time of last Inspection Time(s)	Minimum Inspection Frequency	Description of BMP	Observations (Effectiveness)
BMP #4	Preserve Existing Vegetation	Continual		Weekly or after .5 inch or greater rain event.	Preserving natural habitat to the greatest extent possible. Preserve in clumps or as individual trees. Using safety fence or flagging to delineate prior to commencing work. Delineate work extent.	Limited clearing in work areas. No adverse impacts observed.
BMP # 8	Plastic Sheeting of stockpiles or temporary protection of disturbed areas	0700, 0850, 1030, 1230, 1700		Weekly or after .5 inch or greater rain event.	Ensure plastic sheeting is covering all soil stockpiles. Look for rips tears on the surface and runoff seeps under matting. Plastic should be anchored w/10' grid spacing using sandbags or suitable system. Minimum 12" overlap of all seams required. B	No changes from previous inspection. Remtech needs to provide sand bags.
BMP # 11	Gravel Construction Entrance	0700, 0850, 1030, 1230, 1700		Daily	There should be no sediment, rock or woodchip on paved surfaces.	Area needs to be swept.
BMP #13	Dust Control	N/A		Continual	Apply water or controls as needed. Keep vehicular traffic in current construction areas and established access routes.	Rained off and on.
BMP # 28	Compost Sock	N/A (not installed)		Weekly or after .5 inch or greater rain event.	May be utilized as a check dam and is not efficient for turbidity or suspended solids. When utilized as check dam, they must be staked. May have down stream skirt for undercut protection.	Not installed.
BMP	Bio-filter	0730, 1030, 1620		Weekly or after .5 inch or greater rain event.	Bags should be overlapped by 6". 2 stakes should support each bag. Check for undercutting or end-flow. Inspect for tears and damage. Sediment should not be greater than 1/3 the height of bag.	Contractor is completing installation of bio-bags along silt fence.
BMP #29	Sediment Fence	0830, 1420		Weekly or after .5 inch or greater rain event.	Ensure bottom of fence is not visible and fence in taut. Posts should be a maximum of 6' apart. At termination point, fence should be facing uphill. Fence should not exceed 3' and storage should not exceed 1.5'. Check for channel formation parallel to	Additional fence was installed to approximate station 4 + 00. Fence is not buried, taunt, or wrapped/overlapped at ends were a new section of fence is added.
BMP Type 1 temporary	Tire Wash	0700, 0850, 1030, 1230, 1700		Weekly or more frequent during high demand	Dimensions: 40' long x 10' wide X 18" sump with 50' run out. Ensure wash water drainage/collection and treatment system is functioning and/or frequent water replacement.	Recommend pumping of collected water and removal of sediments. This has not been done to date.
BMP	Mobile Fueling of Vehicles and Heavy Equipment	N/A		During fueling operations	Ensure compliance with local and state regulations. Request documentation for 49 CFR 178 for DOT 406. Specifics too numerous to summarize, refer to BMP.	There were no mobile fueling activities today.

Signature of monitor: _____

Erosion and Sediment Transport Control Measures Inspection Form

Date: 04-09-03

Name of E & E monitor: Erin E. Murphy

Current weather conditions: Cool with moderate winds.

Last 24 Hr weather condition: Off and on rain.

DEQ BMP Designation	BMP Name	Inspection Time(s)	Date and Time of last Inspection Time(s)	Minimum Inspection Frequency	Description of BMP	Observations (Effectiveness)
BMP #4	Preserve Existing Vegetation	Continual		Weekly or after .5 inch or greater rain event.	Preserving natural habitat to the greatest extent possible. Preserve in clumps or as individual trees. Using safety fence or flagging to delineate prior to commencing work. Delineate work extent.	Spoke with Troy Feathers. They will start crushing the vegetation were feasible and attempt to leave roots in place.
BMP # 8	Plastic Sheeting of stockpiles or temporary protection of disturbed areas	0730, 1200, 1715		Weekly or after .5 inch or greater rain event.	Ensure plastic sheeting is covering all soil stockpiles. Look for rips tears on the surface and runoff seeps under matting. Plastic should be anchored w/10' grid spacing using sandbags or suitable system. Minimum 12" overlap of all seams required. B	No changes from previous inspection.
BMP # 11	Gravel Construction Entrance	1500		Daily	There should be no sediment, rock or woodchip on paved surfaces.	Area around decon and work trailers recently swept.
BMP #13	Dust Control			Continual	Apply water or controls as needed. Keep vehicular traffic in current construction areas and established access routes.	No rain, moderate winds. No evidence of dust.
BMP # 28	Compost Sock	N/A (not installed)		Weekly or after .5 inch or greater rain event.	May be utilized as a check dam and is not efficient for turbidity or suspended solids. When utilized as check dam, they must be staked. May have down stream skirt for undercut protection.	Not installed.
BMP	Bio-filter	1330		Weekly or after .5 inch or greater rain event.	Bags should be overlapped by 6". 2 stakes should support each bag. Check for undercutting or end-flow. Inspect for tears and damage. Sediment should not be greater than 1/3 the height of bag.	Bags around survey stakes were put back into place.
BMP #29	Sediment Fence	0800, 1330		Weekly or after .5 inch or greater rain event.	Ensure bottom of fence is not visible and fence is taut. Posts should be a maximum of 6' apart. At termination point, fence should be facing uphill. Fence should not exceed 3' and storage should not exceed 1.5'. Check for channel formation parallel to	Silt fence was repaired in areas needed at 0945.
BMP Type 1 temporary	Tire Wash	1530		Weekly or more frequent during high demand	Dimensions: 40' long x 10' wide X 18" sump with 50' run out. Ensure wash water drainage/collection and treatment system is functioning and/or frequent water replacement.	Tire wash pumped at 1600.
BMP	Mobile Fueling of Vehicles and Heavy Equipment	630		During fueling operations	Ensure compliance with local and state regulations. Request documentation for 49 CFR 178 for DOT 406. Specifics too numerous to summarize, refer to BMP.	A. Murphy supervised mobile fueling activities. No adverse impacts observed.

Signature of monitor: _____

Erosion and Sediment Transport Control Measures Inspection Form

Date: 04-10-03

Name of E & E monitor:

Current weather conditions:

Last 24 Hr weather conditions:

DEQ BMP Designation	BMP Name	Inspection Time(s)	Date and Time of last Inspection Time(s)	Minimum Inspection Frequency	Description of BMP	Observations (Effectiveness)
BMP #4	Preserve Existing Vegetation	Continual		Weekly or after .5 inch or greater rain event.	Preserving natural habitat to the greatest extent possible. Preserve in clumps or as individual trees. Using safety fence or flagging to delineate prior to commencing work. Delineate work extent.	Minimal vegetation removed.
BMP # 8	Plastic Sheetting of stockpiles or temporary protection of disturbed areas			Weekly or after .5 inch or greater rain event.	Ensure plastic sheetting is covering all soil stockpiles. Look for rips tears on the surface and runoff seeps under matting. Plastic should be anchored w/10' grid spacing using sandbags or suitable system. Minimum 12" overlap of all seams required. B	No changes from previous inspection.
BMP # 11	Gravel Construction Entrance			Daily	There should be no sediment, rock or woodchip on paved surfaces.	Area around decon and work trailers recently swept.
BMP #13	Dust Control			Continual	Apply water or controls as needed. Keep vehicular traffic in current construction areas and established access routes.	Rain, moderate winds. No evidence of dust.
BMP # 28	Compost Sock	N/A (not installed)		Weekly or after .5 inch or greater rain event.	May be utilized as a check dam and is not efficient for turbidity or suspended solids. When utilized as check dam, they must be staked. May have down stream skirt for undercut protection.	Not installed.
BMP	Bio-filter			Weekly or after .5 inch or greater rain event.	Bags should be overlapped by 6". 2 stakes should support each bag. Check for undercutting or end-flow. Inspect for tears and damage. Sediment should not be greater then 1/3 the height of bag.	
BMP #29	Sediment Fence			Weekly or after .5 inch or greater rain event.	Ensure bottom of fence is not visible and fence in taut. Posts should be a maximum of 6' apart. At termination point, fence should be facing uphill. Fence should not exceed 3' and storage should not exceed 1.5'. Check for channel formation parallel to	Rain event was not greater than .5 inch, however, a Visual inspection was performed. Silt fence integrity appears to be satisfactory.
BMP Type 1 temporary	Tire Wash			Weekly or more frequent during high demand	Dimensions: 40' long x 10' wide X 18" sump with 50' run out. Ensure wash water drainage/collection and treatment system is functioning and/or frequent water replacement.	
BMP	Mobile Fueling of Vehicles and Heavy Equipment	630		During fueling operations	Ensure compliance with local and state regulations. Request documentation for 49 CFR 178 for DOT 406. Specifics too numerous to summarize, refer to BMP.	A. Murphy supervised mobile fueling activities. No change from previous inspection.

Signature of monitor: _____

Erosion and Sediment Transport Control Measures Inspection Form

Date: 04-14-03

Name of E & E monitor: Erin Murphy

Current weather conditions: High winds (15), Scattered showers

Last 24 Hr weather conditions: Rain and wind.

DEQ BMP Designation	BMP Name	Inspection Time(s)	Date and Time of last Inspection Time(s)	Minimum Inspection Frequency	Description of BMP	Observations (Effectiveness)
BMP #4	Preserve Existing Vegetation	Continual		Weekly or after .5 inch or greater rain event.	Preserving natural habitat to the greatest extent possible. Preserve in dumps or as individual trees. Using safety fence or flagging to delineate prior to commencing work. Delineate work extent.	Vegetation was cleared from STA 16 + 00 - 14+00. Spoke with Troy and requested vegetation be crushed were feasible.
BMP # 8	Plastic Sheeting of stockpiles or temporary protection of disturbed areas	0730, 1500		Weekly or after .5 inch or greater rain event.	Ensure plastic sheeting is covering all soil stockpiles. Look for rips tears on the surface and runoff seeps under matting. Plastic should be anchored w/10' grid spacing using sandbags or suitable system. Minimum 12" overlap of all seams required. B	No changes from previous inspection.
BMP # 11	Gravel Construction Entrance	0730, 1500		Daily	There should be no sediment, rock or woodchip on paved surfaces.	Area looks good.
BMP #13	Dust Control	1500		Continual	Apply water or controls as needed. Keep vehicular traffic in current construction areas and established access routes.	Some scattered showers, high winds. No evidence of dust.
BMP # 28	Compost Sock	N/A (not installed)		Weekly or after .5 inch or greater rain event.	May be utilized as a check dam and is not efficient for turbidity or suspended solids. When utilized as check dam, they must be staked. May have down stream skirt for undercut protection.	Not installed.
BMP	Bio-filter	1500		Weekly or after .5 inch or greater rain event.	Bags should be overlapped by 6". 2 stakes should support each bag. Check for undercutting or end-flow. Inspect for tears and damage. Sediment should not be greater then 1/3 the height of bag.	Additional bags have been ordered and will be placed at west beach.
BMP #29	Sediment Fence	0730, 1300, 1500		Weekly or after .5 inch or greater rain event.	Ensure bottom of fence is not visible and fence in taut. Posts should be a maximum of 6' apart. At termination point, fence should be facing uphill. Fence should not exceed 3' and storage should not exceed 1.5'. Check for channel formation parallel to	Silt fence integrity along the east beach appears to be satisfactory. New fencing was installed along west beach from STA 14 + 00 through 15+ 00. New fence is adequate.
BMP Type 1 temporary	Tire Wash	0730, 1300, 1500		Weekly or more frequent during high demand	Dimensions: 40' long x 10' wide X 18" sump with 50' run out. Ensure wash water drainage/collection and treatment system is functioning and/or frequent water replacement.	Needs to be pumped.
BMP	Mobile Fueling of Vehicles and Heavy Equipment	630		During fueling operations	Ensure compliance with local and state regulations. Request documentation for 49 CFR 178 for DOT 406. Specifics too numerous to summarize, refer to BMP.	A. Murphy supervised mobile fueling activities. No change from previous inspection.

Signature of monitor: _____

Erosion and Sediment Transport Control Measures Inspection Form

Date: 04-15-03

Name of E & E monitor: Erin Murphy

Current weather conditions: slight winds, Few showers

Last 24 Hr weather conditions: Scattered showers and wind.

DEQ BMP Designation	BMP Name	Inspection Time(s)	Date and Time of last Inspection Time(s)	Minimum Inspection Frequency	Description of BMP	Observations (Effectiveness)
BMP #4	Preserve Existing Vegetation	Continual		Weekly or after .5 inch or greater rain event.	Preserving natural habitat to the greatest extent possible. Preserve in clumps or as individual trees. Using safety fence or flagging to delineate prior to commencing work. Delineate work extent.	Limited clearing in work areas.
BMP # 8	Plastic Sheeting of stockpiles or temporary protection of disturbed areas	0730, 100, 1245, 1500, 1710		Weekly or after .5 inch or greater rain event.	Ensure plastic sheeting is covering all soil stockpiles. Look for rips tears on the surface and runoff seeps under matting. Plastic should be anchored w/10' grid spacing using sandbags or suitable system. Minimum 12" overlap of all seams required. B	No changes from previous inspection.
BMP # 11	Gravel Construction Entrance	0730, 100, 1245, 1500, 1710		Daily	There should be no sediment, rock or woodchip on paved surfaces.	Area looks good.
BMP #13	Dust Control	1115		Continual	Apply water or controls as needed. Keep vehicular traffic in current construction areas and established access routes.	Some scattered showers, high winds. No evidence of dust.
BMP # 28	Compost Sock	N/A (not installed)		Weekly or after .5 inch or greater rain event.	May be utilized as a check dam and is not efficient for turbidity or suspended solids. When utilized as check dam, they must be staked. May have down stream skirt for undercut protection.	Not installed.
BMP	Bio-filter	8,001,115		Weekly or after .5 inch or greater rain event.	Bags should be overlapped by 6". 2 stakes should support each bag. Check for undercutting or end-flow. Inspect for tears and damage. Sediment should not be greater than 1/3 the height of bag.	Spoke with Troy Feathers and requested bio bags be places as soon as possible along the silt fence at the west beach. Additional bags have been ordered and should be here tomorrow.
BMP #29	Sediment Fence	0800, 1030		Weekly or after .5 inch or greater rain event.	Ensure bottom of fence is not visible and fence in taut. Posts should be a maximum of 6' apart. At termination point, fence should be facing uphill. Fence should not exceed 3' and storage should not exceed 1.5'. Check for channel formation parallel to	Silt fence integrity along the east and west beaches appear to be satisfactory.
BMP Type 1 temporary	Tire Wash	0730, 100, 1245, 1500, 1710		Weekly or more frequent during high demand	Dimensions: 40' long x 10' wide X 18" sump with 50' run out. Ensure wash water drainage/collection and treatment system is functioning and/or frequent water replacement.	Needs to be pumped.
BMP	Mobile Fueling of Vehicles and Heavy Equipment	630		During fueling operations	Ensure compliance with local and state regulations. Request documentation for 49 CFR 178 for DOT 406. Specifics too numerous to summarize, refer to BMP.	A. Murphy supervised mobile fueling activities. No change from previous inspection.

Signature of monitor: _____

Erosion and Sediment Transport Control Measures Inspection Form

Date: 04-16-03

Name of E & E monitor: Erin Murphy

Current weather conditions: slight winds, sun

Last 24 Hr weather conditions: Scattered showers and wind.

DEQ BMP Designation	BMP Name	Inspection Time(s)	Date and Time of last Inspection Time(s)	Minimum Inspection Frequency	Description of BMP	Observations (Effectiveness)
BMP #4	Preserve Existing Vegetation	Continual		Weekly or after .5 inch or greater rain event.	Preserving natural habitat to the greatest extent possible. Preserve in clumps or as individual trees. Using safety fence or flagging to delineate prior to commencing work. Delineate work extent.	Limited clearing in work areas.
BMP # 8	Plastic Sheeting of stockpiles or temporary protection of disturbed areas	0610, 1030, 1530, 1710		Weekly or after .5 inch or greater rain event.	Ensure plastic sheeting is covering all soil stockpiles. Look for rips tears on the surface and runoff seeps under matting. Plastic should be anchored w/10' grid spacing using sandbags or suitable system. Minimum 12" overlap of all seams required. B	No changes from previous inspection.
BMP # 11	Gravel Construction Entrance	1030		Daily	There should be no sediment, rock or woodchip on paved surfaces.	Area needs to be swept, will recommend to Remtech.
BMP #13	Dust Control	1530		Continual	Apply water or controls as needed. Keep vehicular traffic in current construction areas and established access routes.	Some scattered showers, high winds. No evidence of dust.
BMP # 28	Compost Sock	N/A (not installed)		Weekly or after .5 inch or greater rain event.	May be utilized as a check dam and is not efficient for turbidity or suspended solids. When utilized as check dam, they must be staked. May have down stream skirt for undercut protection.	Not installed.
BMP	Bio-filter	800, 1030		Weekly or after .5 inch or greater rain event.	Bags should be overlapped by 6". 2 stakes should support each bag. Check for undercutting or end-flow. Inspect for tears and damage. Sediment should not be greater than 1/3 the height of bag.	No change from previous inspection.
BMP #29	Sediment Fence	0800, 1030		Weekly or after .5 inch or greater rain event.	Ensure bottom of fence is not visible and fence is taut. Posts should be a maximum of 6' apart. At termination point, fence should be facing uphill. Fence should not exceed 3' and storage should not exceed 1.5'. Check for channel formation parallel to	Silt fence integrity along the east and west beaches appear to be satisfactory.
BMP Type 1 temporary	Tire Wash	1030		Weekly or more frequent during high demand	Dimensions: 40' long x 10' wide X 18" sump with 50' run out. Ensure wash water drainage/collection and treatment system is functioning and/or frequent water replacement.	Remtech pumped out tire wash.
BMP	Mobile Fueling of Vehicles and Heavy Equipment	620		During fueling operations	Ensure compliance with local and state regulations. Request documentation for 49 CFR 178 for DOT 406. Specifics too numerous to summarize, refer to BMP.	E. Murphy supervised mobile fueling activities. No change from previous inspection.

Signature of monitor: _____

Erosion and Sediment Transport Control Measures Inspection Form

Date: 04-17-03

Name of E & E monitor: Erin Murphy

Current weather conditions: slight winds, sun

Last 24 Hr weather conditions: Rain and wind.

DEQ BMP Designation	BMP Name	Inspection Time(s)	Date and Time of last Inspection Time(s)	Minimum Inspection Frequency	Description of BMP	Observations (Effectiveness)
BMP #4	Preserve Existing Vegetation	Continual		Weekly or after .5 inch or greater rain event.	Preserving natural habitat to the greatest extent possible. Preserve in clumps or as individual trees. Using safety fence or flagging to delineate prior to commencing work. Delineate work extent.	Limited clearing in work areas.
BMP # 8	Plastic Sheeting of stockpiles or temporary protection of disturbed areas	0610, 1030, 1530, 1710		Weekly or after .5 inch or greater rain event.	Ensure plastic sheeting is covering all soil stockpiles. Look for rips tears on the surface and runoff seeps under matting. Plastic should be anchored w/10' grid spacing using sandbags or suitable system. Minimum 12" overlap of all seams required. B	No changes from previous inspection.
BMP # 11	Gravel Construction Entrance	1030		Daily	There should be no sediment, rock or woodchip on paved surfaces.	No changes from previous inspection.
BMP #13	Dust Control	1530		Continual	Apply water or controls as needed. Keep vehicular traffic in current construction areas and established access routes.	Some scattered showers, high winds. No evidence of dust.
BMP # 28	Compost Sock	N/A (not installed)		Weekly or after .5 inch or greater rain event.	May be utilized as a check dam and is not efficient for turbidity or suspended solids. When utilized as check dam, they must be staked. May have down stream skirt for undercut protection.	Not installed.
BMP	Bio-filter	800, 1030		Weekly or after .5 inch or greater rain event.	Bags should be overlapped by 6". 2 stakes should support each bag. Check for undercutting or end-flow. Inspect for tears and damage. Sediment should not be greater than 1/3 the height of bag.	Spoke with Troy Feathers (Remtech), he assured me the bags would be in soon.
BMP #29	Sediment Fence	0800, 1030		Weekly or after .5 inch or greater rain event.	Ensure bottom of fence is not visible and fence in taut. Posts should be a maximum of 6' apart. At termination point, fence should be facing uphill. Fence should not exceed 3' and storage should not exceed 1.5'. Check for channel formation parallel to	Silt fence integrity along the east and west beaches appear to be satisfactory. Additional fence was added along the west from STA 11+50 - 15+00.
BMP Type 1 temporary	Tire Wash	1030		Weekly or more frequent during high demand	Dimensions: 40' long x 10' wide X 18" sump with 50' run out. Ensure wash water drainage/collection and treatment system is functioning and/or frequent water replacement.	No change from precious inspection.
BMP	Mobile Fueling of Vehicles and Heavy Equipment	620		During fueling operations	Ensure compliance with local and state regulations. Request documentation for 49 CFR 178 for DOT 406. Specifics too numerous to summarize, refer to BMP.	M. Coenen supervised mobile fueling activities. No change from previous inspection.

Signature of monitor: _____

Erosion and Sediment Transport Control Measures Inspection Form

Date: 04-21-03

Name of E & E monitor: Erin Murphy

Current weather conditions: slight winds, rain

Last 24 Hr weather conditions: Rain and wind.

DEQ BMP Designation	BMP Name	Inspection Time(s)	Date and Time of last Inspection Time(s)	Minimum Inspection Frequency	Description of BMP	Observations (Effectiveness)
BMP #4	Preserve Existing Vegetation	Continual		Weekly or after .5 inch or greater rain event.	Preserving natural habitat to the greatest extent possible. Preserve in clumps or as individual trees. Using safety fence or flagging to delineate prior to commencing work. Delineate work extent.	Limited clearing in work areas.
BMP # 8	Plastic Sheeting of stockpiles or temporary protection of disturbed areas	0610, 1030, 1530, 1710		Weekly or after .5 inch or greater rain event.	Ensure plastic sheeting is covering all soil stockpiles. Look for rips tears on the surface and runoff seeps under matting. Plastic should be anchored w/10' grid spacing using sandbags or suitable system. Minimum 12" overlap of all seams required. B	No changes from previous inspection.
BMP # 11	Gravel Construction Entrance	1030		Daily	There should be no sediment, rock or woodchip on paved surfaces.	No changes from previous inspection.
BMP #13	Dust Control	1530		Continual	Apply water or controls as needed. Keep vehicular traffic in current construction areas and established access routes.	Some scattered showers, high winds. No evidence of dust.
BMP # 28	Compost Sock	N/A (not installed)		Weekly or after .5 inch or greater rain event.	May be utilized as a check dam and is not efficient for turbidity or suspended solids. When utilized as check dam, they must be staked. May have down stream skirt for undercut protection.	Not installed.
BMP	Bio-filter	735		Weekly or after .5 inch or greater rain event.	Bags should be overlapped by 6". 2 stakes should support each bag. Check for undercutting or end-flow. Inspect for tears and damage. Sediment should not be greater than 1/3 the height of bag.	Bio bags were installed along the west beach.
BMP #29	Sediment Fence	735		Weekly or after .5 inch or greater rain event.	Ensure bottom of fence is not visible and fence is taut. Posts should be a maximum of 6' apart. At termination point, fence should be facing uphill. Fence should not exceed 3' and storage should not exceed 1.5'. Check for channel formation parallel to	Silt fence integrity along the east beach appear to be satisfactory. Silt fence along the west beach will need to be repaired.
BMP Type 1 temporary	Tire Wash			Weekly or more frequent during high demand	Dimensions: 40' long x 10' wide X 18" sump with 50' run out. Ensure wash water drainage/collection and treatment system is functioning and/or frequent water replacement.	No change from previous inspection.
BMP	Mobile Fueling of Vehicles and Heavy Equipment	620		During fueling operations	Ensure compliance with local and state regulations. Request documentation for 49 CFR 178 for DOT 406. Specifics too numerous to summarize, refer to BMP.	A. Murphy supervised mobile fueling activities. No change from previous inspection.

Signature of monitor: _____

Erosion and Sediment Transport Control Measures Inspection Form

Date: 04-22-03

Name of E & E monitor: Erin Murphy

Current weather conditions: slight winds, rain

Last 24 Hr weather conditions: Rain and wind.

DEQ BMP Designation	BMP Name	Inspection Time(s)	Date and Time of last Inspection Time(s)	Minimum Inspection Frequency	Description of BMP	Observations (Effectiveness)
BMP #4	Preserve Existing Vegetation	Continual		Weekly or after .5 inch or greater rain event.	Preserving natural habitat to the greatest extent possible. Preserve in clumps or as individual trees. Using safety fence or flagging to delineate prior to commencing work. Delineate work extent.	Limited clearing in work areas.
BMP # 8	Plastic Sheeting of stockpiles or temporary protection of disturbed areas	0610, 1000, 1530, 1710		Weekly or after .5 inch or greater rain event.	Ensure plastic sheeting is covering all soil stockpiles. Look for rips tears on the surface and runoff seeps under matting. Plastic should be anchored w/10' grid spacing using sandbags or suitable system. Minimum 12" overlap of all seams required. B	No changes from previous inspection.
BMP # 11	Gravel Construction Entrance	1000		Daily	There should be no sediment, rock or woodchip on paved surfaces.	Area recently swept and cleaned.
BMP #13	Dust Control	1530		Continual	Apply water or controls as needed. Keep vehicular traffic in current construction areas and established access routes.	Partly cloudy, moderate winds. No evidence of dust.
BMP # 28	Compost Sock	N/A (not installed)		Weekly or after .5 inch or greater rain event.	May be utilized as a check dam and is not efficient for turbidity or suspended solids. When utilized as check dam, they must be staked. May have down stream skirt for undercut protection.	Not installed.
BMP	Bio-filter	735		Weekly or after .5 inch or greater rain event.	Bags should be overlapped by 6". 2 stakes should support each bag. Check for undercutting or end-flow. Inspect for tears and damage. Sediment should not be greater than 1/3 the height of bag.	No changes from previous inspection.
BMP #29	Sediment Fence	735		Weekly or after .5 inch or greater rain event.	Ensure bottom of fence is not visible and fence in taut. Posts should be a maximum of 6' apart. At termination point, fence should be facing uphill. Fence should not exceed 3' and storage should not exceed 1.5'. Check for channel formation parallel to	Silt fence integrity along the east beach appears to be satisfactory. Silt fence along the west beach was repaired at 0735.
BMP Type 1 temporary	Tire Wash	1000		Weekly or more frequent during high demand	Dimensions: 40' long x 10' wide X 18" sump with 50' run out. Ensure wash water drainage/collection and treatment system is functioning and/or frequent water replacement.	Recently pumped.
BMP	Mobile Fueling of Vehicles and Heavy Equipment	620		During fueling operations	Ensure compliance with local and state regulations. Request documentation for 49 CFR 178 for DOT 406. Specifics too numerous to summarize, refer to BMP.	E. Murphy supervised mobile fueling activities. No change from previous inspection.

Signature of monitor: _____

Erosion and Sediment Transport Control Measures Inspection Form

Date: 04-23-03

Name of E & E monitor: Erin Murphy

Current weather conditions: moderate winds, rain

Last 24 Hr weather conditions: Rain and wind.

DEQ BMP Designation	BMP Name	Inspection Time(s)	Date and Time of last Inspection Time(s)	Minimum Inspection Frequency	Description of BMP	Observations (Effectiveness)
BMP #4	Preserve Existing Vegetation	Continual		Weekly or after .5 inch or greater rain event.	Preserving natural habitat to the greatest extent possible. Preserve in clumps or as individual trees. Using safety fence or flagging to delineate prior to commencing work. Delineate work extent.	Limited clearing in work areas.
BMP # 8	Plastic Sheeting of stockpiles or temporary protection of disturbed areas	0610, 1000, 1530, 1710		Weekly or after .5 inch or greater rain event.	Ensure plastic sheeting is covering all soil stockpiles. Look for rips tears on the surface and runoff seeps under matting. Plastic should be anchored w/10' grid spacing using sandbags or suitable system. Minimum 12" overlap of all seams required. B	No changes from previous inspection.
BMP # 11	Gravel Construction Entrance	1000		Daily	There should be no sediment, rock or woodchip on paved surfaces.	No change from previous inspection.
BMP #13	Dust Control	1530		Continual	Apply water or controls as needed. Keep vehicular traffic in current construction areas and established access routes.	High volume of rain. No evidence of dust.
BMP # 28	Compost Sock	N/A (not installed)		Weekly or after .5 inch or greater rain event.	May be utilized as a check dam and is not efficient for turbidity or suspended solids. When utilized as check dam, they must be staked. May have down stream skirt for undercut protection.	Not installed.
BMP	Bio-filter	735		Weekly or after .5 inch or greater rain event.	Bags should be overlapped by 6". 2 stakes should support each bag. Check for undercutting or end-flow. Inspect for tears and damage. Sediment should not be greater than 1/3 the height of bag.	No changes from previous inspection.
BMP #29	Sediment Fence	735		Weekly or after .5 inch or greater rain event.	Ensure bottom of fence is not visible and fence in taut. Posts should be a maximum of 6' apart. At termination point, fence should be facing uphill. Fence should not exceed 3' and storage should not exceed 1.5'. Check for channel formation parallel to	Silt fence integrity along the east beach appears to be satisfactory. Silt fence along the west beach is ripped in the same place (STA 12+50). E & E informed Troy Feathers (Remtech).
BMP Type 1 temporary	Tire Wash	1720		Weekly or more frequent during high demand	Dimensions: 40' long x 10' wide X 18" sump with 50' run out. Ensure wash water drainage/collection and treatment system is functioning and/or frequent water replacement.	No change from previous inspection.
BMP	Mobile Fueling of Vehicles and Heavy Equipment	620		During fueling operations	Ensure compliance with local and state regulations. Request documentation for 49 CFR 178 for DOT 406. Specifics too numerous to summarize, refer to BMP.	M. Coenen supervised mobile fueling activities. No change from previous inspection.

Signature of monitor: _____

Erosion and Sediment Transport Control Measures Inspection Form

Date: 04-24-03

Name of E & E monitor: Erin Murphy

Current weather conditions: moderate winds, rain

Last 24 Hr weather conditions: Rain and wind.

DEQ BMP Designation	BMP Name	Inspection Time(s)	Date and Time of last Inspection Time(s)	Minimum Inspection Frequency	Description of BMP	Observations (Effectiveness)
BMP #4	Preserve Existing Vegetation	Continual		Weekly or after .5 inch or greater rain event.	Preserving natural habitat to the greatest extent possible. Preserve in clumps or as individual trees. Using safety fence or flagging to delineate prior to commencing work. Delineate work extent.	Limited clearing in work areas.
BMP # 8	Plastic Sheeting of stockpiles or temporary protection of disturbed areas	0610, 1000, 1530, 1710		Weekly or after .5 inch or greater rain event.	Ensure plastic sheeting is covering all soil stockpiles. Look for rips tears on the surface and runoff seeps under matting. Plastic should be anchored w/10' grid spacing using sandbags or suitable system. Minimum 12" overlap of all seams required. B	No changes from previous inspection.
BMP # 11	Gravel Construction Entrance	1000		Daily	There should be no sediment, rock or woodchip on paved surfaces.	Area looks good. No change from previous inspection.
BMP #13	Dust Control	1530		Continual	Apply water or controls as needed. Keep vehicular traffic in current construction areas and established access routes.	No evidence of dust.
BMP # 28	Compost Sock	N/A (not installed)		Weekly or after .5 inch or greater rain event.	May be utilized as a check dam and is not efficient for turbidity or suspended solids. When utilized as check dam, they must be staked. May have down stream skirt for undercut protection.	Not installed.
BMP	Bio-filter	735		Weekly or after .5 inch or greater rain event.	Bags should be overlapped by 6". 2 stakes should support each bag. Check for undercutting or end-flow. Inspect for tears and damage. Sediment should not be greater than 1/3 the height of bag.	No changes from previous inspection.
BMP #29	Sediment Fence	735		Weekly or after .5 inch or greater rain event.	Ensure bottom of fence is not visible and fence in taut. Posts should be a maximum of 6' apart. At termination point, fence should be facing uphill. Fence should not exceed 3' and storage should not exceed 1.5'. Check for channel formation parallel to	Silt fence integrity along the east beach appears to be satisfactory. Silt fence along the west beach is ripped in the same place (STA 12+50). E & E informed Troy Feathers (Remtech).
BMP Type 1 temporary	Tire Wash	1720		Weekly or more frequent during high demand	Dimensions: 40' long x 10' wide X 18" sump with 50' run out. Ensure wash water drainage/collection and treatment system is functioning and/or frequent water replacement.	No change from previous inspection.
BMP	Mobile Fueling of Vehicles and Heavy Equipment	620		During fueling operations	Ensure compliance with local and state regulations. Request documentation for 49 CFR 178 for DOT 406. Specifics too numerous to summarize, refer to BMP.	A. Murphy supervised mobile fueling activities. No change from previous inspection.

Signature of monitor: _____

Erosion and Sediment Transport Control Measures Inspection Form

Date: 04-28-03

Name of E & E monitor: Erin Murphy

Current weather conditions: High winds.

Last 24 Hr weather conditions: Rain and wind.

DEQ BMP Designation	BMP Name	Inspection Time(s)	Date and Time of last Inspection Time(s)	Minimum Inspection Frequency	Description of BMP	Observations (Effectiveness)
BMP #4	Preserve Existing Vegetation	Continual		Weekly or after .5 inch or greater rain event.	Preserving natural habitat to the greatest extent possible. Preserve in clumps or as individual trees. Using safety fence or flagging to delineate prior to commencing work. Delineate work extent.	Limited clearing in work areas.
BMP # 8	Plastic Sheeting of stockpiles or temporary protection of disturbed areas	0610, 1000, 1530, 1710		Weekly or after .5 inch or greater rain event.	Ensure plastic sheeting is covering all soil stockpiles. Look for rips tears on the surface and runoff seeps under matting. Plastic should be anchored w/10' grid spacing using sandbags or suitable system. Minimum 12" overlap of all seams required. B	No changes from previous inspection.
BMP # 11	Gravel Construction Entrance	1000		Daily	There should be no sediment, rock or woodchip on paved surfaces.	Area looks good. No change from previous inspection.
BMP #13	Dust Control	1530		Continual	Apply water or controls as needed. Keep vehicular traffic in current construction areas and established access routes.	Water trucks sprayed roads at 1700. Winds @ 20 MPH. No notable dust.
BMP # 28	Compost Sock	N/A (not installed)		Weekly or after .5 inch or greater rain event.	May be utilized as a check dam and is not efficient for turbidity or suspended solids. When utilized as check dam, they must be staked. May have down stream skirt for undercut protection.	Not installed.
BMP	Bio-filter	735		Weekly or after .5 inch or greater rain event.	Bags should be overlapped by 6". 2 stakes should support each bag. Check for undercutting or end-flow. Inspect for tears and damage. Sediment should not be greater than 1/3 the height of bag.	No changes from previous inspection.
BMP #29	Sediment Fence	735		Weekly or after .5 inch or greater rain event.	Ensure bottom of fence is not visible and fence in taut. Posts should be a maximum of 6' apart. At termination point, fence should be facing uphill. Fence should not exceed 3' and storage should not exceed 1.5'. Check for channel formation parallel to	Silt fence integrity along the east and west beaches appear to be satisfactory.
BMP Type 1 temporary	Tire Wash	1720		Weekly or more frequent during high demand	Dimensions: 40' long x 10' wide X 18" sump with 50' run out. Ensure wash water drainage/collection and treatment system is functioning and/or frequent water replacement.	No change from previous inspection.
BMP	Mobile Fueling of Vehicles and Heavy Equipment	620		During fueling operations	Ensure compliance with local and state regulations. Request documentation for 49 CFR 178 for DOT 406. Specifics too numerous to summarize, refer to BMP.	E. Murphy supervised mobile fueling activities. No change from previous inspection.

Signature of monitor: _____

Erosion and Sediment Transport Control Measures Inspection Form

Date: 04-29-03

Name of E & E monitor: Erin Murphy

Current weather conditions: moderate winds.

Last 24 Hr weather conditions: Rain and wind.

DEQ BMP Designation	BMP Name	Inspection Time(s)	Date and Time of last Inspection Time(s)	Minimum Inspection Frequency	Description of BMP	Observations (Effectiveness)
BMP #4	Preserve Existing Vegetation	Continual		Weekly or after .5 inch or greater rain event.	Preserving natural habitat to the greatest extent possible. Preserve in clumps or as individual trees. Using safety fence or flagging to delineate prior to commencing work. Delineate work extent.	Limited clearing in work areas.
BMP # 8	Plastic Sheeting of stockpiles or temporary protection of disturbed areas	0610, 1000, 1530, 1710		Weekly or after .5 inch or greater rain event.	Ensure plastic sheeting is covering all soil stockpiles. Look for rips tears on the surface and runoff seeps under matting. Plastic should be anchored w/10' grid spacing using sandbags or suitable system. Minimum 12" overlap of all seams required. B	No changes from previous inspection.
BMP # 11	Gravel Construction Entrance	1000		Daily	There should be no sediment, rock or woodchip on paved surfaces.	Area looks good. No change from previous inspection.
BMP #13	Dust Control	1530		Continual	Apply water or controls as needed. Keep vehicular traffic in current construction areas and established access routes.	Rain in morning, no need for water trucks.
BMP # 28	Compost Sock	N/A (not installed)		Weekly or after .5 inch or greater rain event.	May be utilized as a check dam and is not efficient for turbidity or suspended solids. When utilized as check dam, they must be staked. May have down stream skirt for undercut protection.	Not installed.
BMP	Bio-filter	735		Weekly or after .5 inch or greater rain event.	Bags should be overlapped by 6". 2 stakes should support each bag. Check for undercutting or end-flow. Inspect for tears and damage. Sediment should not be greater than 1/3 the height of bag.	No changes from previous inspection.
BMP #29	Sediment Fence	735		Weekly or after .5 inch or greater rain event.	Ensure bottom of fence is not visible and fence is taut. Posts should be a maximum of 6' apart. At termination point, fence should be facing uphill. Fence should not exceed 3' and storage should not exceed 1.5'. Check for channel formation parallel to	Silt fence integrity along the east and west beaches appear to be satisfactory.
BMP Type 1 temporary	Tire Wash	1720		Weekly or more frequent during high demand	Dimensions: 40' long x 10' wide X 18" sump with 50' run out. Ensure wash water drainage/collection and treatment system is functioning and/or frequent water replacement.	No change from previous inspection.
BMP	Mobile Fueling of Vehicles and Heavy Equipment	620		During fueling operations	Ensure compliance with local and state regulations. Request documentation for 49 CFR 178 for DOT 406. Specifics too numerous to summarize, refer to BMP.	M. Coenen supervised mobile fueling activities. No change from previous inspection.

Signature of monitor: _____

Erosion and Sediment Transport Control Measures Inspection Form

Date: 04-30-03

Name of E & E monitor: Erin Murphy

Current weather conditions: moderate winds.

Last 24 Hr weather conditions: Rain and wind.

DEQ BMP Designation	BMP Name	Inspection Time(s)	Date and Time of last Inspection Time(s)	Minimum Inspection Frequency	Description of BMP	Observations (Effectiveness)
BMP #4	Preserve Existing Vegetation	Continual		Weekly or after .5 inch or greater rain event.	Preserving natural habitat to the greatest extent possible. Preserve in clumps or as individual trees. Using safety fence or flagging to delineate prior to commencing work. Delineate work extent.	Vegetation was cleared from STA 12+50 to 8+82. Additional clearing will be required tomorrow for installation of sheet pile.
BMP # 8	Plastic Sheeting of stockpiles or temporary protection of disturbed areas	0610, 1000, 1530, 1710		Weekly or after .5 inch or greater rain event.	Ensure plastic sheeting is covering all soil stockpiles. Look for rips tears on the surface and runoff seeps under matting. Plastic should be anchored w/10' grid spacing using sandbags or suitable system. Minimum 12" overlap of all seams required. B	No changes from previous inspection.
BMP # 11	Gravel Construction Entrance	1000		Daily	There should be no sediment, rock or woodchip on paved surfaces.	Area looks good. No change from previous inspection.
BMP #13	Dust Control	1530		Continual	Apply water or controls as needed. Keep vehicular traffic in current construction areas and established access routes.	Rain in early morning, no need for water trucks.
BMP # 28	Compost Sock	N/A (not installed)		Weekly or after .5 inch or greater rain event.	May be utilized as a check dam and is not efficient for turbidity or suspended solids. When utilized as check dam, they must be staked. May have down stream skirt for undercut protection.	Not installed.
BMP	Bio-filter	735, 1030, 1235, 1500, 1715		Weekly or after .5 inch or greater rain event.	Bags should be overlapped by 6". 2 stakes should support each bag. Check for undercutting or end-flow. Inspect for tears and damage. Sediment should not be greater than 1/3 the height of bag.	Bio-bags will need to be placed along silt fence from STA13+00 to 8+82.
BMP #29	Sediment Fence	735, 1030, 1235, 1500, 1715		Weekly or after .5 inch or greater rain event.	Ensure bottom of fence is not visible and fence is taut. Posts should be a maximum of 6' apart. At termination point, fence should be facing uphill. Fence should not exceed 3' and storage should not exceed 1.5'. Check for channel formation parallel to	Silt fence integrity along the east and west beaches appear to be satisfactory. Additional silt fence installed from 13+00 to 8.82.
BMP Type 1 temporary	Tire Wash	1520		Weekly or more frequent during high demand	Dimensions: 40' long x 10' wide X 18" sump with 50' run out. Ensure wash water drainage/collection and treatment system is functioning and/or frequent water replacement.	No change from previous inspection.
BMP	Mobile Fueling of Vehicles and Heavy Equipment	620		During fueling operations	Ensure compliance with local and state regulations. Request documentation for 49 CFR 178 for DOT 406. Specifics too numerous to summarize, refer to BMP.	A. Murphy supervised mobile fueling activities. No change from previous inspection.

Signature of monitor: _____

Erosion and Sediment Transport Control Measures Inspection Form

Date: 05-01-03

Name of E & E monitor: Erin Murphy

Current weather conditions: sunny and warm

Last 24 Hr weather conditions: Overcast.

DEQ BMP Designation	BMP Name	Inspection Time(s)	Date and Time of last Inspection Time(s)	Minimum Inspection Frequency	Description of BMP	Observations (Effectiveness)
BMP #4	Preserve Existing Vegetation	Continual		Weekly or after .5 inch or greater rain event.	Preserving natural habitat to the greatest extent possible. Preserve in clumps or as individual trees. Using safety fence or flagging to delineate prior to commencing work. Delineate work extent.	Remaining vegetation was cleared from STA 12+50 to 8+82. A few tree's still remain between 12+00 and 12+50. These trees are scheduled to be removed sometime late next week.
BMP # 8	Plastic Sheeting of stockpiles or temporary protection of disturbed areas	0610, 1000, 1530, 1710		Weekly or after .5 inch or greater rain event.	Ensure plastic sheeting is covering all soil stockpiles. Look for rips tears on the surface and runoff seeps under matting. Plastic should be anchored w/10' grid spacing using sandbags or suitable system. Minimum 12" overlap of all seams required. B	No changes from previous inspection.
BMP # 11	Gravel Construction Entrance	1000		Daily	There should be no sediment, rock or woodchip on paved surfaces.	No change from previous inspection.
BMP #13	Dust Control	1530		Continual	Apply water or controls as needed. Keep vehicular traffic in current construction areas and established access routes.	No changes from previous inspection.
BMP # 28	Compost Sock	N/A (not installed)		Weekly or after .5 inch or greater rain event.	May be utilized as a check dam and is not efficient for turbidity or suspended solids. When utilized as check dam, they must be staked. May have down stream skirt for undercut protection.	Not installed.
BMP	Bio-filter	735, 1030, 1235, 1500, 1715		Weekly or after .5 inch or greater rain event.	Bags should be overlapped by 6". 2 stakes should support each bag. Check for undercutting or end-flow. Inspect for tears and damage. Sediment should not be greater than 1/3 the height of bag.	Bio-bags were installed along silt fence from STA13+00 to 8+82.
BMP #29	Sediment Fence	735, 1030, 1235, 1500, 1715		Weekly or after .5 inch or greater rain event.	Ensure bottom of fence is not visible and fence is taut. Posts should be a maximum of 6' apart. At termination point, fence should be facing uphill. Fence should not exceed 3' and storage should not exceed 1.5'. Check for channel formation parallel to	Silt fence integrity along the east and west beaches appear to be satisfactory. Areas ripped/torn by wildlife have been restapled.
BMP Type 1 temporary	Tire Wash	1520		Weekly or more frequent during high demand	Dimensions: 40' long x 10' wide X 18" sump with 50' run out. Ensure wash water drainage/collection and treatment system is functioning and/or frequent water replacement.	No change from previous inspection.
BMP	Mobile Fueling of Vehicles and Heavy Equipment	620		During fueling operations	Ensure compliance with local and state regulations. Request documentation for 49 CFR 178 for DOT 406. Specifics too numerous to summarize, refer to BMP.	E. Murphy supervised mobile fueling activities. No change from previous inspection.

Signature of monitor: _____

Erosion and Sediment Transport Control Measures Inspection Form

Date: 05-05-03

Name of E & E monitor: Erin Murphy

Current weather conditions: sunny and warm

Last 24 Hr weather conditions: Overcast.

DEQ BMP Designation	BMP Name	Inspection Time(s)	Date and Time of last Inspection Time(s)	Minimum Inspection Frequency	Description of BMP	Observations (Effectiveness)
BMP #4	Preserve Existing Vegetation	Continual		Weekly or after .5 inch or greater rain event.	Preserving natural habitat to the greatest extent possible. Preserve in clumps or as individual trees. Using safety fence or flagging to delineate prior to commencing work. Delineate work extent.	Remaining vegetation and large boulders were removed from STA 9+50 to 8+82. A few tree's still remain between 12+00 and 12+50. These trees are scheduled to be removed sometime late this week.
BMP # 8	Plastic Sheeting of stockpiles or temporary protection of disturbed areas	0610, 1000, 1530, 1710		Weekly or after .5 inch or greater rain event.	Ensure plastic sheeting is covering all soil stockpiles. Look for rips tears on the surface and runoff seeps under matting. Plastic should be anchored w/10' grid spacing using sandbags or suitable system. Minimum 12" overlap of all seams required. B	No changes from previous inspection.
BMP # 11	Gravel Construction Entrance	1000		Daily	There should be no sediment, rock or woodchip on paved surfaces.	Area clean.
BMP #13	Dust Control	1530		Continual	Apply water or controls as needed. Keep vehicular traffic in current construction areas and established access routes.	No changes from previous inspection.
BMP # 28	Compost Sock	N/A (not installed)		Weekly or after .5 inch or greater rain event.	May be utilized as a check dam and is not efficient for turbidity or suspended solids. When utilized as check dam, they must be staked. May have down stream skirt for undercut protection.	Not installed.
BMP	Bio-filter	735, 1030, 1235, 1500, 1715		Weekly or after .5 inch or greater rain event.	Bags should be overlapped by 6". 2 stakes should support each bag. Check for undercutting or end-flow. Inspect for tears and damage. Sediment should not be greater than 1/3 the height of bag.	No change from previous inspection.
BMP #29	Sediment Fence	735, 1030, 1235, 1500, 1715		Weekly or after .5 inch or greater rain event.	Ensure bottom of fence is not visible and fence in taut. Posts should be a maximum of 6' apart. At termination point, fence should be facing uphill. Fence should not exceed 3' and storage should not exceed 1.5'. Check for channel formation parallel to	Silt fence integrity along the east and west beaches appear to be satisfactory. Areas along the west fence have been ripped/torn by wildlife in same locations. E & E will restaple before tomorrow at 10:00.
BMP Type 1 temporary	Tire Wash	1520		Weekly or more frequent during high demand	Dimensions: 40' long x 10' wide X 18" sump with 50' run out. Ensure wash water drainage/collection and treatment system is functioning and/or frequent water replacement.	No change from previous inspection.
BMP	Mobile Fueling of Vehicles and Heavy Equipment	620		During fueling operations	Ensure compliance with local and state regulations. Request documentation for 49 CFR 178 for DOT 406. Specifics too numerous to summarize, refer to BMP.	M. Coenen supervised mobile fueling activities. No change from previous inspection.

Signature of monitor: _____

Erosion and Sediment Transport Control Measures Inspection Form

Date: 05-06-03

Name of E & E monitor: Erin Murphy

Current weather conditions: Partly cloudy and cool.

Last 24 Hr weather conditions: Overcast.

DEQ BMP Designation	BMP Name	Inspection Time(s)	Date and Time of last Inspection Time(s)	Minimum Inspection Frequency	Description of BMP	Observations (Effectiveness)
BMP #4	Preserve Existing Vegetation	Continual		Weekly or after .5 inch or greater rain event.	Preserving natural habitat to the greatest extent possible. Preserve in clumps or as individual trees. Using safety fence or flagging to delineate prior to commencing work. Delineate work extent.	No change from previous inspection.
BMP # 8	Plastic Sheeting of stockpiles or temporary protection of disturbed areas	0610, 1000, 1530, 1710		Weekly or after .5 inch or greater rain event.	Ensure plastic sheeting is covering all soil stockpiles. Look for rips tears on the surface and runoff seeps under matting. Plastic should be anchored w/10' grid spacing using sandbags or suitable system. Minimum 12" overlap of all seams required. B	No changes from previous inspection.
BMP # 11	Gravel Construction Entrance	1000		Daily	There should be no sediment, rock or woodchip on paved surfaces.	Area clean.
BMP #13	Dust Control	1530		Continual	Apply water or controls as needed. Keep vehicular traffic in current construction areas and established access routes.	No changes from previous inspection.
BMP # 28	Compost Sock	N/A (not installed)		Weekly or after .5 inch or greater rain event.	May be utilized as a check dam and is not efficient for turbidity or suspended solids. When utilized as check dam, they must be staked. May have down stream skirt for undercut protection.	Not installed.
BMP	Bio-filter	735, 1030, 1235, 1500, 1715		Weekly or after .5 inch or greater rain event.	Bags should be overlapped by 6". 2 stakes should support each bag. Check for undercutting or end-flow. Inspect for tears and damage. Sediment should not be greater than 1/3 the height of bag.	No change from previous inspection.
BMP #29	Sediment Fence	735, 1030, 1235, 1500, 1715		Weekly or after .5 inch or greater rain event.	Ensure bottom of fence is not visible and fence is taut. Posts should be a maximum of 6' apart. At termination point, fence should be facing uphill. Fence should not exceed 3' and storage should not exceed 1.5'. Check for channel formation parallel to	Silt fence integrity along the east and west beaches appear to be satisfactory. Areas along the west fence have been ripped/torn by wildlife in same locations. Remtech repaired required areas in AM.
BMP Type 1 temporary	Tire Wash	1520		Weekly or more frequent during high demand	Dimensions: 40' long x 10' wide X 18" sump with 50' run out. Ensure wash water drainage/collection and treatment system is functioning and/or frequent water replacement.	No change from previous inspection.
BMP	Mobile Fueling of Vehicles and Heavy Equipment	620		During fueling operations	Ensure compliance with local and state regulations. Request documentation for 49 CFR 178 for DOT 406. Specifics too numerous to summarize, refer to BMP.	M. Coenen supervised mobile fueling activities. No change from previous inspection.

Signature of monitor: _____

Erosion and Sediment Transport Control Measures Inspection Form

Date: 05-07-03

Name of E & E monitor: Erin Murphy

Current weather conditions: Partly cloudy and cool.

Last 24 Hr weather conditions: Overcast.

DEQ BMP Designation	BMP Name	Inspection Time(s)	Date and Time of last Inspection Time(s)	Minimum Inspection Frequency	Description of BMP	Observations (Effectiveness)
BMP #4	Preserve Existing Vegetation	Continual		Weekly or after .5 inch or greater rain event.	Preserving natural habitat to the greatest extent possible. Preserve in clumps or as individual trees. Using safety fence or flagging to delineate prior to commencing work. Delineate work extent.	No change from previous inspection.
BMP # 8	Plastic Sheeting of stockpiles or temporary protection of disturbed areas	0610, 1000, 1530, 1710		Weekly or after .5 inch or greater rain event.	Ensure plastic sheeting is covering all soil stockpiles. Look for rips tears on the surface and runoff seeps under matting. Plastic should be anchored w/10' grid spacing using sandbags or suitable system. Minimum 12" overlap of all seams required. B	No changes from previous inspection.
BMP # 11	Gravel Construction Entrance	1200		Daily	There should be no sediment, rock or woodchip on paved surfaces.	Area recently swept and cleaned.
BMP #13	Dust Control	1200		Continual	Apply water or controls as needed. Keep vehicular traffic in current construction areas and established access routes.	No changes from previous inspection.
BMP # 28	Compost Sock	N/A (not installed)		Weekly or after .5 inch or greater rain event.	May be utilized as a check dam and is not efficient for turbidity or suspended solids. When utilized as check dam, they must be staked. May have down stream skirt for undercut protection.	Not installed.
BMP	Bio-filter	640, 1000, 1200, 1400, 1700		Weekly or after .5 inch or greater rain event.	Bags should be overlapped by 6". 2 stakes should support each bag. Check for undercutting or end-flow. Inspect for tears and damage. Sediment should not be greater than 1/3 the height of bag.	Bio-filter bags are in good condition.
BMP #29	Sediment Fence	640, 1000, 1200, 1400, 1700		Weekly or after .5 inch or greater rain event.	Ensure bottom of fence is not visible and fence is taut. Posts should be a maximum of 6' apart. At termination point, fence should be facing uphill. Fence should not exceed 3' and storage should not exceed 1.5'. Check for channel formation parallel to	Silt fence integrity along the east and west beaches appear to be satisfactory. Areas along the west fence continue to be ripped/torn by wildlife in same locations nightly.
BMP Type 1 temporary	Tire Wash	1520		Weekly or more frequent during high demand	Dimensions: 40' long x 10' wide X 18" sump with 50' run out. Ensure wash water drainage/collection and treatment system is functioning and/or frequent water replacement.	Sediment removed and water pumped out at 0830.
BMP	Mobile Fueling of Vehicles and Heavy Equipment	615		During fueling operations	Ensure compliance with local and state regulations. Request documentation for 49 CFR 178 for DOT 406. Specifics too numerous to summarize, refer to BMP.	E. Murphy supervised mobile fueling activities. No change from previous inspection.

Signature of monitor: _____

Erosion and Sediment Transport Control Measures Inspection Form

Date: 05-08-03

Name of E & E monitor: Andrew Murphy & Mike Coenen

Current weather conditions: Partly cloudy and cool.

Last 24 Hr weather conditions: Overcast.

DEQ BMP Designation	BMP Name	Inspection Time(s)	Date and Time of last Inspection Time(s)	Minimum Inspection Frequency	Description of BMP	Observations (Effectiveness)
BMP #4	Preserve Existing Vegetation	Continual		Weekly or after .5 inch or greater rain event.	Preserving natural habitat to the greatest extent possible. Preserve in clumps or as individual trees. Using safety fence or flagging to delineate prior to commencing work. Delineate work extent.	No change from previous inspection.
BMP # 8	Plastic Sheeting of stockpiles or temporary protection of disturbed areas	0610, 1000, 1530, 1710		Weekly or after .5 inch or greater rain event.	Ensure plastic sheeting is covering all soil stockpiles. Look for rips tears on the surface and runoff seeps under matting. Plastic should be anchored w/10' grid spacing using sandbags or suitable system. Minimum 12" overlap of all seams required. B	No changes from previous inspection.
BMP # 11	Gravel Construction Entrance	1200		Daily	There should be no sediment, rock or woodchip on paved surfaces.	Area recently swept and cleaned.
BMP #13	Dust Control	1200		Continual	Apply water or controls as needed. Keep vehicular traffic in current construction areas and established access routes.	No changes from previous inspection.
BMP # 28	Compost Sock	N/A (not installed)		Weekly or after .5 inch or greater rain event.	May be utilized as a check dam and is not efficient for turbidity or suspended solids. When utilized as check dam, they must be staked. May have down stream skirt for undercut protection.	Not Applicable/Not installed.
BMP	Bio-filter	640, 1000, 1200, 1400, 1700		Weekly or after .5 inch or greater rain event.	Bags should be overlapped by 6". 2 stakes should support each bag. Check for undercutting or end-flow. Inspect for tears and damage. Sediment should not be greater than 1/3 the height of bag.	Bio-filter bags are in good condition.
BMP #29	Sediment Fence	640, 1000, 1200, 1400, 1700		Weekly or after .5 inch or greater rain event.	Ensure bottom of fence is not visible and fence is taut. Posts should be a maximum of 6' apart. At termination point, fence should be facing uphill. Fence should not exceed 3' and storage should not exceed 1.5'. Check for channel formation parallel to	Silt fence integrity along the east and west beaches appear to be satisfactory. Areas along the west fence continue to be ripped/torn by wildlife in same locations nightly.
BMP Type 1 temporary	Tire Wash	1520		Weekly or more frequent during high demand	Dimensions: 40' long x 10' wide X 18" sump with 50' run out. Ensure wash water drainage/collection and treatment system is functioning and/or frequent water replacement.	No changes from previous inspection.
BMP	Mobile Fueling of Vehicles and Heavy Equipment	615		During fueling operations	Ensure compliance with local and state regulations. Request documentation for 49 CFR 178 for DOT 406. Specifics too numerous to summarize, refer to BMP.	A. Murphy supervised mobile fueling activities. No change from previous inspection.

Signature of monitor: _____

Erosion and Sediment Transport Control Measures Inspection Form

Date: 05-12-03

Name of E & E monitor: Erin Murphy

Current weather conditions: Partly cloudy and cool (PM); Sunny (AM).

Last 24 Hr weather conditions: Same

DEQ BMP Designation	BMP Name	Inspection Time(s)	Date and Time of last Inspection Time(s)	Minimum Inspection Frequency	Description of BMP	Observations (Effectiveness)
BMP #4	Preserve Existing Vegetation	Continual		Weekly or after .5 inch or greater rain event.	Preserving natural habitat to the greatest extent possible. Preserve in clumps or as individual trees. Using safety fence or flagging to delineate prior to commencing work. Delineate work extent.	Tree's are still standing from 12+00-12+50, but should be removed sometime this week.
BMP # 8	Plastic Sheeting of stockpiles or temporary protection of disturbed areas	0610, 1000, 1530, 1710		Weekly or after .5 inch or greater rain event.	Ensure plastic sheeting is covering all soil stockpiles. Look for rips tears on the surface and runoff seeps under matting. Plastic should be anchored w/10' grid spacing using sandbags or suitable system. Minimum 12" overlap of all seams required. B	No changes from previous inspection.
BMP # 11	Gravel Construction Entrance	1200		Daily	There should be no sediment, rock or woodchip on paved surfaces.	Rock debris and mud have been carried through the reduction zone and the support zone from an unwashed truck. Remtech has been notified.
BMP #13	Dust Control	1200		Continual	Apply water or controls as needed. Keep vehicular traffic in current construction areas and established access routes.	No changes from previous inspection.
BMP # 28	Compost Sock	N/A (not installed)		Weekly or after .5 inch or greater rain event.	May be utilized as a check dam and is not efficient for turbidity or suspended solids. When utilized as check dam, they must be staked. May have down stream skirt for undercut protection.	Not Applicable/Not installed.
BMP	Bio-filter	640, 1000, 1200, 1400, 1700		Weekly or after .5 inch or greater rain event.	Bags should be overlapped by 6". 2 stakes should support each bag. Check for undercutting or end-flow. Inspect for tears and damage. Sediment should not be greater than 1/3 the height of bag.	Bio-filter bags are in good condition.
BMP #29	Sediment Fence	640, 1000, 1200, 1400, 1700		Weekly or after .5 inch or greater rain event.	Ensure bottom of fence is not visible and fence is taut. Posts should be a maximum of 6' apart. At termination point, fence should be facing uphill. Fence should not exceed 3' and storage should not exceed 1.5'. Check for channel formation parallel to	Silt fence integrity along the east and west beaches appear to be satisfactory. Areas along the west fence continue to be ripped/torn by wildlife in same locations nightly.
BMP Type 1 temporary	Tire Wash	1100		Weekly or more frequent during high demand	Dimensions: 40' long x 10' wide X 18" sump with 50' run out. Ensure wash water drainage/collection and treatment system is functioning and/or frequent water replacement.	One truck did not utilize tire wash. Tire wash is full and will need to be pumped again.
BMP	Mobile Fueling of Vehicles and Heavy Equipment	615		During fueling operations	Ensure compliance with local and state regulations. Request documentation for 49 CFR 178 for DOT 406. Specifics too numerous to summarize, refer to BMP.	A. Murphy supervised mobile fueling activities. No change from previous inspection.

Signature of monitor: _____

Erosion and Sediment Transport Control Measures Inspection Form

Date: 05-13-03

Name of E & E monitor: Erin Murphy

Current weather conditions: Sunny

Last 24 Hr weather conditions: few clouds, no rain.

DEQ BMP Designation	BMP Name	Inspection Time(s)	Date and Time of last Inspection Time(s)	Minimum Inspection Frequency	Description of BMP	Observations (Effectiveness)
BMP #4	Preserve Existing Vegetation	Continual		Weekly or after .5 inch or greater rain event.	Preserving natural habitat to the greatest extent possible. Preserve in clumps or as individual trees. Using safety fence or flagging to delineate prior to commencing work. Delineate work extent.	Tree's are still standing from 12+00-12+50, but should be removed sometime this week.
BMP # 8	Plastic Sheeting of stockpiles or temporary protection of disturbed areas	0610, 1000, 1530, 1710		Weekly or after .5 inch or greater rain event.	Ensure plastic sheeting is covering all soil stockpiles. Look for rips tears on the surface and runoff seeps under matting. Plastic should be anchored w/10' grid spacing using sandbags or suitable system. Minimum 12" overlap of all seams required. B	No changes from previous inspection.
BMP # 11	Gravel Construction Entrance	1200		Daily	There should be no sediment, rock or woodchip on paved surfaces.	Area looks satisfactory.
BMP #13	Dust Control	1200		Continual	Apply water or controls as needed. Keep vehicular traffic in current construction areas and established access routes.	No changes from previous inspection.
BMP # 28	Compost Sock	N/A (not installed)		Weekly or after .5 inch or greater rain event.	May be utilized as a check dam and is not efficient for turbidity or suspended solids. When utilized as check dam, they must be staked. May have down stream skirt for undercut protection.	Not Applicable/Not installed.
BMP	Bio-filter	640, 1000, 1200, 1400, 1700		Weekly or after .5 inch or greater rain event.	Bags should be overlapped by 6". 2 stakes should support each bag. Check for undercutting or end-flow. Inspect for tears and damage. Sediment should not be greater than 1/3 the height of bag.	Bio-filter bags are in good condition.
BMP #29	Sediment Fence	640, 1000, 1200, 1400, 1700		Weekly or after .5 inch or greater rain event.	Ensure bottom of fence is not visible and fence is taut. Posts should be a maximum of 6' apart. At termination point, fence should be facing uphill. Fence should not exceed 3' and storage should not exceed 1.5'. Check for channel formation parallel to	Silt fence integrity along the east and west beaches appear to be satisfactory. Areas along the west fence continue to be ripped/torn by wildlife in same locations nightly. E & E repaired fence in areas needed at 0800.
BMP Type 1 temporary	Tire Wash	1100		Weekly or more frequent during high demand	Dimensions: 40' long x 10' wide X 18" sump with 50' run out. Ensure wash water drainage/collection and treatment system is functioning and/or frequent water replacement.	Over-filled.
BMP	Mobile Fueling of Vehicles and Heavy Equipment	615		During fueling operations	Ensure compliance with local and state regulations. Request documentation for 49 CFR 178 for DOT 406. Specifics too numerous to summarize, refer to BMP.	M. Coenen supervised mobile fueling activities. No adverse impacts were observed.

Signature of monitor: _____

Erosion and Sediment Transport Control Measures Inspection Form

Date: 05-14-03

Name of E & E monitor: Erin Murphy

Current weather conditions: Sunny

Last 24 Hr weather conditions: few clouds, no rain.

DEQ BMP Designation	BMP Name	Inspection Time(s)	Date and Time of last Inspection Time(s)	Minimum Inspection Frequency	Description of BMP	Observations (Effectiveness)
BMP #4	Preserve Existing Vegetation	Continual		Weekly or after .5 inch or greater rain event.	Preserving natural habitat to the greatest extent possible. Preserve in clumps or as individual trees. Using safety fence or flagging to delineate prior to commencing work. Delineate work extent.	Tree's are still standing from 12+00-12+50.
BMP # 8	Plastic Sheeting of stockpiles or temporary protection of disturbed areas	0610, 1000, 1530, 1710		Weekly or after .5 inch or greater rain event.	Ensure plastic sheeting is covering all soil stockpiles. Look for rips tears on the surface and runoff seeps under matting. Plastic should be anchored w/10' grid spacing using sandbags or suitable system. Minimum 12" overlap of all seams required. B	No changes from previous inspection.
BMP # 11	Gravel Construction Entrance	1200		Daily	There should be no sediment, rock or woodchip on paved surfaces.	High rain volume kept area clean.
BMP #13	Dust Control	1200		Continual	Apply water or controls as needed. Keep vehicular traffic in current construction areas and established access routes.	Not needed due to high rain volume.
BMP # 28	Compost Sock	N/A (not installed)		Weekly or after .5 inch or greater rain event.	May be utilized as a check dam and is not efficient for turbidity or suspended solids. When utilized as check dam, they must be staked. May have down stream skirt for undercut protection.	Not Applicable/Not installed.
BMP	Bio-filter	640, 1000, 1200, 1400, 1700		Weekly or after .5 inch or greater rain event.	Bags should be overlapped by 6". 2 stakes should support each bag. Check for undercutting or end-flow. Inspect for tears and damage. Sediment should not be greater than 1/3 the height of bag.	Bio-filter bags are in good condition.
BMP #29	Sediment Fence	640, 1000, 1200, 1400, 1700		Weekly or after .5 inch or greater rain event.	Ensure bottom of fence is not visible and fence is taut. Posts should be a maximum of 6' apart. At termination point, fence should be facing uphill. Fence should not exceed 3' and storage should not exceed 1.5'. Check for channel formation parallel to	Silt fence integrity along the east and west beaches appear to be satisfactory. Areas along the west fence continue to be ripped/torn by wildlife in same locations nightly.
BMP Type 1 temporary	Tire Wash	1100		Weekly or more frequent during high demand	Dimensions: 40' long x 10' wide X 18" sump with 50' run out. Ensure wash water drainage/collection and treatment system is functioning and/or frequent water replacement.	Overfilled due to rain.
BMP	Mobile Fueling of Vehicles and Heavy Equipment	615		During fueling operations	Ensure compliance with local and state regulations. Request documentation for 49 CFR 178 for DOT 406. Specifics too numerous to summarize, refer to BMP.	A. Murphy supervised mobile fueling activities. No adverse impacts were observed.

Signature of monitor: _____

Erosion and Sediment Transport Control Measures Inspection Form

Date: 05-15-03

Name of E & E monitor: Erin Murphy

Current weather conditions: Overcast and rain.

Last 24 Hr weather conditions: few clouds, no rain.

DEQ BMP Designation	BMP Name	Inspection Time(s)	Date and Time of last Inspection Time(s)	Minimum Inspection Frequency	Description of BMP	Observations (Effectiveness)
BMP #4	Preserve Existing Vegetation	Continual		Weekly or after .5 inch or greater rain event.	Preserving natural habitat to the greatest extent possible. Preserve in clumps or as individual trees. Using safety fence or flagging to delineate prior to commencing work. Delineate work extent.	Tree's are still standing from 12+00-12+50.
BMP # 8	Plastic Sheeting of stockpiles or temporary protection of disturbed areas	0610, 1000, 1530, 1710		Weekly or after .5 inch or greater rain event.	Ensure plastic sheeting is covering all soil stockpiles. Look for rips tears on the surface and runoff seeps under matting. Plastic should be anchored w/10' grid spacing using sandbags or suitable system. Minimum 12" overlap of all seams required. B	No changes from previous inspection.
BMP # 11	Gravel Construction Entrance	1200		Daily	There should be no sediment, rock or woodchip on paved surfaces.	Area looks satisfactory.
BMP #13	Dust Control	1200		Continual	Apply water or controls as needed. Keep vehicular traffic in current construction areas and established access routes.	Not needed/High rain volume.
BMP # 28	Compost Sock	N/A (not installed)		Weekly or after .5 inch or greater rain event.	May be utilized as a check dam and is not efficient for turbidity or suspended solids. When utilized as check dam, they must be staked. May have down stream skirt for undercut protection.	Not Applicable/Not installed.
BMP	Bio-filter	640, 1000, 1200, 1400, 1700		Weekly or after .5 inch or greater rain event.	Bags should be overlapped by 6". 2 stakes should support each bag. Check for undercutting or end-flow. Inspect for tears and damage. Sediment should not be greater than 1/3 the height of bag.	Bio-filter bags are in good condition.
BMP #29	Sediment Fence	640, 1000, 1200, 1400, 1700		Weekly or after .5 inch or greater rain event.	Ensure bottom of fence is not visible and fence in taut. Posts should be a maximum of 6' apart. At termination point, fence should be facing uphill. Fence should not exceed 3' and storage should not exceed 1.5'. Check for channel formation parallel to	Silt fence integrity along the east and west beaches appear to be satisfactory. Areas along the west fence continue to be ripped/torn by wildlife in same locations nightly.
BMP Type 1 temporary	Tire Wash	1100		Weekly or more frequent during high demand	Dimensions: 40' long x 10' wide X 18" sump with 50' run out. Ensure wash water drainage/collection and treatment system is functioning and/or frequent water replacement.	Overfilled due to rain.
BMP	Mobile Fueling of Vehicles and Heavy Equipment	615		During fueling operations	Ensure compliance with local and state regulations. Request documentation for 49 CFR 178 for DOT 406. Specifics too numerous to summarize, refer to BMP.	A. Murphy supervised mobile fueling activities. No adverse impacts were observed.

Signature of monitor: _____

Erosion and Sediment Transport Control Measures Inspection Form

Date: 05-19-03

Name of E & E monitor: Erin Murphy

Current weather conditions: Sunny

Last 24 Hr weather conditions: few clouds, no rain.

DEQ BMP Designation	BMP Name	Inspection Time(s)	Date and Time of last Inspection Time(s)	Minimum Inspection Frequency	Description of BMP	Observations (Effectiveness)
BMP #4	Preserve Existing Vegetation	Continual		Weekly or after .5 inch or greater rain event.	Preserving natural habitat to the greatest extent possible. Preserve in clumps or as individual trees. Using safety fence or flagging to delineate prior to commencing work. Delineate work extent.	Tree removal between 12+00-12+50 began and will continue tomorrow.
BMP # 8	Plastic Sheeting of stockpiles or temporary protection of disturbed areas	0610, 1000, 1530, 1710		Weekly or after .5 inch or greater rain event.	Ensure plastic sheeting is covering all soil stockpiles. Look for rips tears on the surface and runoff seeps under matting. Plastic should be anchored w/10' grid spacing using sandbags or suitable system. Minimum 12" overlap of all seams required. B	No changes from previous inspection.
BMP # 11	Gravel Construction Entrance	1200		Daily	There should be no sediment, rock or woodchip on paved surfaces.	Area looks satisfactory.
BMP #13	Dust Control	1200		Continual	Apply water or controls as needed. Keep vehicular traffic in current construction areas and established access routes.	No dust observed. Water trucks were utilized.
BMP # 28	Compost Sock	N/A (not installed)		Weekly or after .5 inch or greater rain event.	May be utilized as a check dam and is not efficient for turbidity or suspended solids. When utilized as check dam, they must be staked. May have down stream skirt for undercut protection.	Not Applicable/Not installed.
BMP	Bio-filter	640, 1000, 1200, 1400, 1700		Weekly or after .5 inch or greater rain event.	Bags should be overlapped by 6". 2 stakes should support each bag. Check for undercutting or end-flow. Inspect for tears and damage. Sediment should not be greater than 1/3 the height of bag.	Bio-filter bags are in good condition.
BMP #29	Sediment Fence	640, 1000, 1200, 1400, 1700		Weekly or after .5 inch or greater rain event.	Ensure bottom of fence is not visible and fence in taut. Posts should be a maximum of 6' apart. At termination point, fence should be facing uphill. Fence should not exceed 3' and storage should not exceed 1.5'. Check for channel formation parallel to	Silt fence integrity along the east and west beaches appear to be satisfactory. Areas along the west fence continue to be ripped/torn by wildlife in same locations nightly.
BMP Type 1 temporary	Tire Wash	1100		Weekly or more frequent during high demand	Dimensions: 40' long x 10' wide X 18" sump with 50' run out. Ensure wash water drainage/collection and treatment system is functioning and/or frequent water replacement.	Recently pumped.
BMP	Mobile Fueling of Vehicles and Heavy Equipment	615		During fueling operations	Ensure compliance with local and state regulations. Request documentation for 49 CFR 178 for DOT 406. Specifics too numerous to summarize, refer to BMP.	E. Murphy supervised mobile fueling activities. No adverse impacts were observed.

Signature of monitor: _____

Erosion and Sediment Transport Control Measures Inspection Form

Date: 05-20-03

Name of E & E monitor: Erin Murphy

Current weather conditions: Partly cloudy, scattered showers

Last 24 Hr weather conditions: few clouds, no rain.

DEQ BMP Designation	BMP Name	Inspection Time(s)	Date and Time of last Inspection Time(s)	Minimum Inspection Frequency	Description of BMP	Observations (Effectiveness)
BMP #4	Preserve Existing Vegetation	Continual		Weekly or after .5 inch or greater rain event.	Preserving natural habitat to the greatest extent possible. Preserve in clumps or as individual trees. Using safety fence or flagging to delineate prior to commencing work. Delineate work extent.	Vegetation removal is complete between 12+00-12+50.
BMP # 8	Plastic Sheeting of stockpiles or temporary protection of disturbed areas	0610, 1000, 1530, 1710		Weekly or after .5 inch or greater rain event.	Ensure plastic sheeting is covering all soil stockpiles. Look for rips tears on the surface and runoff seeps under matting. Plastic should be anchored w/10' grid spacing using sandbags or suitable system. Minimum 12" overlap of all seams required. B	No changes from previous inspection.
BMP # 11	Gravel Construction Entrance	1200		Daily	There should be no sediment, rock or woodchip on paved surfaces.	Area needs to be swept.
BMP #13	Dust Control	1200		Continual	Apply water or controls as needed. Keep vehicular traffic in current construction areas and established access routes.	No dust observed. Water trucks were utilized.
BMP # 28	Compost Sock	N/A (not installed)		Weekly or after .5 inch or greater rain event.	May be utilized as a check dam and is not efficient for turbidity or suspended solids. When utilized as check dam, they must be staked. May have down stream skirt for undercut protection.	Not Applicable/Not installed.
BMP	Bio-filter	640, 1000, 1200, 1400, 1700		Weekly or after .5 inch or greater rain event.	Bags should be overlapped by 6". 2 stakes should support each bag. Check for undercutting or end-flow. Inspect for tears and damage. Sediment should not be greater than 1/3 the height of bag.	Bio-filter bags are in good condition.
BMP #29	Sediment Fence	640, 1000, 1200, 1400, 1700		Weekly or after .5 inch or greater rain event.	Ensure bottom of fence is not visible and fence in taut. Posts should be a maximum of 6' apart. At termination point, fence should be facing uphill. Fence should not exceed 3' and storage should not exceed 1.5'. Check for channel formation parallel to	Silt fence integrity along the east and west beaches appear to be satisfactory. Areas along the west fence continue to be ripped/torn by wildlife in same locations nightly. E & E and Remtech repaired silt fence along west beach.
BMP Type 1 temporary	Tire Wash	1100		Weekly or more frequent during high demand	Dimensions: 40' long x 10' wide X 18" sump with 50' run out. Ensure wash water drainage/collection and treatment system is functioning and/or frequent water replacement.	Sediment was removed at 1435.
BMP	Mobile Fueling of Vehicles and Heavy Equipment	615		During fueling operations	Ensure compliance with local and state regulations. Request documentation for 49 CFR 178 for DOT 406. Specifics too numerous to summarize, refer to BMP.	M. Coenen supervised mobile fueling activities. No adverse impacts were observed.

Signature of monitor: _____

Erosion and Sediment Transport Control Measures Inspection Form

Date: 05-21-03

Name of E & E monitor: Erin Murphy

Current weather conditions: Partly cloudy

Last 24 Hr weather conditions: Same

DEQ BMP Designation	BMP Name	Inspection Time(s)	Date and Time of last Inspection Time(s)	Minimum Inspection Frequency	Description of BMP	Observations (Effectiveness)
BMP #4	Preserve Existing Vegetation	Continual		Weekly or after .5 inch or greater rain event.	Preserving natural habitat to the greatest extent possible. Preserve in clumps or as individual trees. Using safety fence or flagging to delineate prior to commencing work. Delineate work extent.	Vegetation removal is complete, no additional removal of existing vegetation is anticipated.
BMP # 8	Plastic Sheeting of stockpiles or temporary protection of disturbed areas	0610, 1000, 1530, 1710		Weekly or after .5 inch or greater rain event.	Ensure plastic sheeting is covering all soil stockpiles. Look for rips tears on the surface and runoff seeps under matting. Plastic should be anchored w/10' grid spacing using sandbags or suitable system. Minimum 12" overlap of all seams required. B	No changes from previous inspection.
BMP # 11	Gravel Construction Entrance	1200		Daily	There should be no sediment, rock or woodchip on paved surfaces.	Area looks clean.
BMP #13	Dust Control	1200		Continual	Apply water or controls as needed. Keep vehicular traffic in current construction areas and established access routes.	No dust observed. Water trucks were utilized.
BMP # 28	Compost Sock	N/A (not installed)		Weekly or after .5 inch or greater rain event.	May be utilized as a check dam and is not efficient for turbidity or suspended solids. When utilized as check dam, they must be staked. May have down stream skirt for undercut protection.	Not Applicable/Not installed.
BMP	Bio-filter	640, 1000, 1200, 1400, 1700		Weekly or after .5 inch or greater rain event.	Bags should be overlapped by 6". 2 stakes should support each bag. Check for undercutting or end-flow. Inspect for tears and damage. Sediment should not be greater than 1/3 the height of bag.	Bio-filter bags are in good condition.
BMP #29	Sediment Fence	640, 1000, 1200, 1400, 1700		Weekly or after .5 inch or greater rain event.	Ensure bottom of fence is not visible and fence is taut. Posts should be a maximum of 6' apart. At termination point, fence should be facing uphill. Fence should not exceed 3' and storage should not exceed 1.5'. Check for channel formation parallel to	Silt fence integrity along the east and west beaches appear to be satisfactory. Areas along the west fence continue to be ripped/torn by wildlife in same locations nightly. E & E repaired silt fence along west beach.
BMP Type 1 temporary	Tire Wash	1100		Weekly or more frequent during high demand	Dimensions: 40' long x 10' wide X 18" sump with 50' run out. Ensure wash water drainage/collection and treatment system is functioning and/or frequent water replacement.	No changes from previous inspection.
BMP	Mobile Fueling of Vehicles and Heavy Equipment	615		During fueling operations	Ensure compliance with local and state regulations. Request documentation for 49 CFR 178 for DOT 406. Specifics too numerous to summarize, refer to BMP.	A. Murphy supervised mobile fueling activities. No adverse impacts were observed.

Signature of monitor: _____

Erosion and Sediment Transport Control Measures Inspection Form

Date: 05-22-03

Name of E & E monitor: Erin Murphy

Current weather conditions: Partly cloudy

Last 24 Hr weather conditions: Same

DEQ BMP Designation	BMP Name	Inspection Time(s)	Date and Time of last Inspection Time(s)	Minimum Inspection Frequency	Description of BMP	Observations (Effectiveness)
BMP #4	Preserve Existing Vegetation	Continual		Weekly or after .5 inch or greater rain event.	Preserving natural habitat to the greatest extent possible. Preserve in clumps or as individual trees. Using safety fence or flagging to delineate prior to commencing work. Delineate work extent.	Vegetation removal is complete, no additional removal of existing vegetation is anticipated.
BMP # 8	Plastic Sheeting of stockpiles or temporary protection of disturbed areas	0610, 1000, 1530, 1710		Weekly or after .5 inch or greater rain event.	Ensure plastic sheeting is covering all soil stockpiles. Look for rips tears on the surface and runoff seeps under matting. Plastic should be anchored w/10' grid spacing using sandbags or suitable system. Minimum 12" overlap of all seams required. B	No changes from previous inspection.
BMP # 11	Gravel Construction Entrance	1200		Daily	There should be no sediment, rock or woodchip on paved surfaces.	Area need to be swept.
BMP #13	Dust Control	1200		Continual	Apply water or controls as needed. Keep vehicular traffic in current construction areas and established access routes.	No dust observed. Water trucks were utilized.
BMP # 28	Compost Sock	N/A (not installed)		Weekly or after .5 inch or greater rain event.	May be utilized as a check dam and is not efficient for turbidity or suspended solids. When utilized as check dam, they must be staked. May have down stream skirt for undercut protection.	Not Applicable/Not installed.
BMP	Bio-filter	640, 1000, 1200, 1400, 1700		Weekly or after .5 inch or greater rain event.	Bags should be overlapped by 6". 2 stakes should support each bag. Check for undercutting or end-flow. Inspect for tears and damage. Sediment should not be greater than 1/3 the height of bag.	Bio-filter bags are in good condition.
BMP #29	Sediment Fence	640, 1000, 1200, 1400, 1700		Weekly or after .5 inch or greater rain event.	Ensure bottom of fence is not visible and fence in taut. Posts should be a maximum of 6' apart. At termination point, fence should be facing uphill. Fence should not exceed 3' and storage should not exceed 1.5'. Check for channel formation parallel to	Silt fence integrity along the east and west beaches appear to be satisfactory. Areas along the west fence continue to be ripped/torn by wildlife in same locations nightly.
BMP Type 1 temporary	Tire Wash	1100		Weekly or more frequent during high demand	Dimensions: 40' long x 10' wide X 18" sump with 50' run out. Ensure wash water drainage/collection and treatment system is functioning and/or frequent water replacement.	No changes from previous inspection.
BMP	Mobile Fueling of Vehicles and Heavy Equipment	615		During fueling operations	Ensure compliance with local and state regulations. Request documentation for 49 CFR 178 for DOT 406. Specifics too numerous to summarize, refer to BMP.	E. Murphy supervised mobile fueling activities. No adverse impacts were observed.

Signature of monitor: _____

Erosion and Sediment Transport Control Measures Inspection Form

Date: 05-27-03

Name of E & E monitor: Erin Murphy

Current weather conditions: Sunny and warm

Last 24 Hr weather conditions: Partly cloudy

DEQ BMP Designation	BMP Name	Inspection Time(s)	Date and Time of last Inspection Time(s)	Minimum Inspection Frequency	Description of BMP	Observations (Effectiveness)
BMP #4	Preserve Existing Vegetation	Continual		Weekly or after .5 inch or greater rain event.	Preserving natural habitat to the greatest extent possible. Preserve in clumps or as individual trees. Using safety fence or flagging to delineate prior to commencing work. Delineate work extent.	Vegetation removal is complete, no additional removal of existing vegetation is anticipated.
BMP # 8	Plastic Sheeting of stockpiles or temporary protection of disturbed areas	0610, 1000, 1530, 1710		Weekly or after .5 inch or greater rain event.	Ensure plastic sheeting is covering all soil stockpiles. Look for rips tears on the surface and runoff seeps under matting. Plastic should be anchored w/10' grid spacing using sandbags or suitable system. Minimum 12" overlap of all seams required. B	No changes from previous inspection.
BMP # 11	Gravel Construction Entrance	1200		Daily	There should be no sediment, rock or woodchip on paved surfaces.	Area was sprayed with water truck. Rocks and mud are still present.
BMP #13	Dust Control	1200		Continual	Apply water or controls as needed. Keep vehicular traffic in current construction areas and established access routes.	No dust observed. Water trucks were utilized.
BMP # 28	Compost Sock	N/A (not installed)		Weekly or after .5 inch or greater rain event.	May be utilized as a check dam and is not efficient for turbidity or suspended solids. When utilized as check dam, they must be staked. May have down stream skirt for undercut protection.	Not Applicable/Not installed.
BMP	Bio-filter	640, 1000, 1200, 1400, 1700		Weekly or after .5 inch or greater rain event.	Bags should be overlapped by 6". 2 stakes should support each bag. Check for undercutting or end-flow. Inspect for tears and damage. Sediment should not be greater than 1/3 the height of bag.	Bio-filter bags are in good condition.
BMP #29	Sediment Fence	640, 1000, 1200, 1400, 1700		Weekly or after .5 inch or greater rain event.	Ensure bottom of fence is not visible and fence is taut. Posts should be a maximum of 6' apart. At termination point, fence should be facing uphill. Fence should not exceed 3' and storage should not exceed 1.5'. Check for channel formation parallel to	Silt fence integrity along the east and west beaches appear to be satisfactory. Areas along the west fence continue to be ripped/torn by wildlife in same locations nightly.
BMP Type 1 temporary	Tire Wash	1100		Weekly or more frequent during high demand	Dimensions: 40' long x 10' wide X 18" sump with 50' run out. Ensure wash water drainage/collection and treatment system is functioning and/or frequent water replacement.	Needs to be pumped and have sediment removed.
BMP	Mobile Fueling of Vehicles and Heavy Equipment	615		During fueling operations	Ensure compliance with local and state regulations. Request documentation for 49 CFR 178 for DOT 406. Specifics too numerous to summarize, refer to BMP.	M. Coenen supervised mobile fueling activities. No adverse impacts were observed.

Signature of monitor: _____

Erosion and Sediment Transport Control Measures Inspection Form

Date: 05-28-03

Name of E & E monitor: Erin Murphy

Current weather conditions: Partly cloudy

Last 24 Hr weather conditions: Partly cloudy

DEQ BMP Designation	BMP Name	Inspection Time(s)	Date and Time of last Inspection Time(s)	Minimum Inspection Frequency	Description of BMP	Observations (Effectiveness)
BMP #4	Preserve Existing Vegetation	Continual		Weekly or after .5 inch or greater rain event.	Preserving natural habitat to the greatest extent possible. Preserve in clumps or as individual trees. Using safety fence or flagging to delineate prior to commencing work. Delineate work extent.	Vegetation removal is complete, no additional removal of existing vegetation is anticipated.
BMP # 8	Plastic Sheeting of stockpiles or temporary protection of disturbed areas	0610, 1000, 1530, 1710		Weekly or after .5 inch or greater rain event.	Ensure plastic sheeting is covering all soil stockpiles. Look for rips tears on the surface and runoff seeps under matting. Plastic should be anchored w/10' grid spacing using sandbags or suitable system. Minimum 12" overlap of all seams required. B	No changes from previous inspection.
BMP # 11	Gravel Construction Entrance	1200		Daily	There should be no sediment, rock or woodchip on paved surfaces.	Area was sprayed with water truck, and appears clean.
BMP #13	Dust Control	1200		Continual	Apply water or controls as needed. Keep vehicular traffic in current construction areas and established access routes.	No dust observed. Water trucks were utilized.
BMP # 28	Compost Sock	N/A (not installed)		Weekly or after .5 inch or greater rain event.	May be utilized as a check dam and is not efficient for turbidity or suspended solids. When utilized as check dam, they must be staked. May have down stream skirt for undercut protection.	Not Applicable/Not installed.
BMP	Bio-filter	640, 1000, 1200, 1400, 1700		Weekly or after .5 inch or greater rain event.	Bags should be overlapped by 6". 2 stakes should support each bag. Check for undercutting or end-flow. Inspect for tears and damage. Sediment should not be greater than 1/3 the height of bag.	Bio-filter bags are in good condition.
BMP #29	Sediment Fence	640, 1000, 1200, 1400, 1700		Weekly or after .5 inch or greater rain event.	Ensure bottom of fence is not visible and fence is taut. Posts should be a maximum of 6' apart. At termination point, fence should be facing uphill. Fence should not exceed 3' and storage should not exceed 1.5'. Check for channel formation parallel to	Silt fence integrity along the east and west beaches appear to be satisfactory. Areas along the west fence continue to be ripped/torn by wildlife in same locations nightly. High water level is also causing rips and tears in fence.
BMP Type 1 temporary	Tire Wash	1100		Weekly or more frequent during high demand	Dimensions: 40' long x 10' wide X 18" sump with 50' run out. Ensure wash water drainage/collection and treatment system is functioning and/or frequent water replacement.	Needs to be pumped and have sediment removed.
BMP	Mobile Fueling of Vehicles and Heavy Equipment	615		During fueling operations	Ensure compliance with local and state regulations. Request documentation for 49 CFR 178 for DOT 406. Specifics too numerous to summarize, refer to BMP.	A. Murphy supervised mobile fueling activities. No adverse impacts were observed.

Signature of monitor: _____

Erosion and Sediment Transport Control Measures Inspection Form

Date: 05-29-03

Name of E & E monitor: Erin Murphy

Current weather conditions: Partly cloudy

Last 24 Hr weather conditions: Partly cloudy

DEQ BMP Designation	BMP Name	Inspection Time(s)	Date and Time of last Inspection Time(s)	Minimum Inspection Frequency	Description of BMP	Observations (Effectiveness)
BMP #4	Preserve Existing Vegetation	Continual		Weekly or after .5 inch or greater rain event.	Preserving natural habitat to the greatest extent possible. Preserve in clumps or as individual trees. Using safety fence or flagging to delineate prior to commencing work. Delineate work extent.	Vegetation removal is complete, no additional removal of existing vegetation is anticipated.
BMP # 8	Plastic Sheeting of stockpiles or temporary protection of disturbed areas	0610, 1000, 1530, 1710		Weekly or after .5 inch or greater rain event.	Ensure plastic sheeting is covering all soil stockpiles. Look for rips tears on the surface and runoff seeps under matting. Plastic should be anchored w/10' grid spacing using sandbags or suitable system. Minimum 12" overlap of all seams required. B	No changes from previous inspection.
BMP # 11	Gravel Construction Entrance	1200		Daily	There should be no sediment, rock or woodchip on paved surfaces.	Area is clean.
BMP #13	Dust Control	1200		Continual	Apply water or controls as needed. Keep vehicular traffic in current construction areas and established access routes.	No dust observed. Water trucks were utilized.
BMP # 28	Compost Sock	N/A (not installed)		Weekly or after .5 inch or greater rain event.	May be utilized as a check dam and is not efficient for turbidity or suspended solids. When utilized as check dam, they must be staked. May have down stream skirt for undercut protection.	Not Applicable/Not installed.
BMP	Bio-filter	640, 1000, 1200, 1400, 1700		Weekly or after .5 inch or greater rain event.	Bags should be overlapped by 6". 2 stakes should support each bag. Check for undercutting or end-flow. Inspect for tears and damage. Sediment should not be greater than 1/3 the height of bag.	Bio-filter bags are in good condition.
BMP #29	Sediment Fence	640, 1000, 1200, 1400, 1700		Weekly or after .5 inch or greater rain event.	Ensure bottom of fence is not visible and fence is taut. Posts should be a maximum of 6' apart. At termination point, fence should be facing uphill. Fence should not exceed 3' and storage should not exceed 1.5'. Check for channel formation parallel to	Remtech repaired the silt fencing in the morning. Due to seasonal high tides and spring runoff the silt fence was moved slightly inland at STA 8.82 to avoid impacts to the fence.
BMP Type 1 temporary	Tire Wash	1100		Weekly or more frequent during high demand	Dimensions: 40' long x 10' wide X 18" sump with 50' run out. Ensure wash water drainage/collection and treatment system is functioning and/or frequent water replacement.	Needs to be pumped and have sediment removed.
BMP	Mobile Fueling of Vehicles and Heavy Equipment	615		During fueling operations	Ensure compliance with local and state regulations. Request documentation for 49 CFR 178 for DOT 406. Specifics too numerous to summarize, refer to BMP.	E. Murphy supervised mobile fueling activities. No adverse impacts were observed.

Signature of monitor: _____

Erosion and Sediment Transport Control Measures Inspection Form

Date: 05-30-03

Name of E & E monitor: Erin Murphy

Current weather conditions: Partly cloudy

Last 24 Hr weather conditions: Partly cloudy

DEQ BMP Designation	BMP Name	Inspection Time(s)	Date and Time of last Inspection Time(s)	Minimum Inspection Frequency	Description of BMP	Observations (Effectiveness)
BMP #4	Preserve Existing Vegetation	Continual		Weekly or after .5 inch or greater rain event.	Preserving natural habitat to the greatest extent possible. Preserve in clumps or as individual trees. Using safety fence or flagging to delineate prior to commencing work. Delineate work extent.	Vegetation removal is complete, no additional removal of existing vegetation is anticipated.
BMP # 8	Plastic Sheeting of stockpiles or temporary protection of disturbed areas	0610, 1000, 1530, 1710		Weekly or after .5 inch or greater rain event.	Ensure plastic sheeting is covering all soil stockpiles. Look for rips tears on the surface and runoff seeps under matting. Plastic should be anchored w/10' grid spacing using sandbags or suitable system. Minimum 12" overlap of all seams required. B	No changes from previous inspection.
BMP # 11	Gravel Construction Entrance	1200		Daily	There should be no sediment, rock or woodchip on paved surfaces.	Area is clean.
BMP #13	Dust Control	1200		Continual	Apply water or controls as needed. Keep vehicular traffic in current construction areas and established access routes.	No dust observed. Water trucks were utilized.
BMP # 28	Compost Sock	N/A (not installed)		Weekly or after .5 inch or greater rain event.	May be utilized as a check dam and is not efficient for turbidity or suspended solids. When utilized as check dam, they must be staked. May have down stream skirt for undercut protection.	Not Applicable/Not installed.
BMP	Bio-filter	640, 1000, 1200, 1400, 1700		Weekly or after .5 inch or greater rain event.	Bags should be overlapped by 6". 2 stakes should support each bag. Check for undercutting or end-flow. Inspect for tears and damage. Sediment should not be greater than 1/3 the height of bag.	Bio-filter bags are in good condition.
BMP #29	Sediment Fence	640, 1000, 1200, 1400, 1700		Weekly or after .5 inch or greater rain event.	Ensure bottom of fence is not visible and fence in taut. Posts should be a maximum of 6' apart. At termination point, fence should be facing uphill. Fence should not exceed 3' and storage should not exceed 1.5'. Check for channel formation parallel to	Remtech repaired the silt fencing in the morning.
BMP Type 1 temporary	Tire Wash	1100		Weekly or more frequent during high demand	Dimensions: 40' long x 10' wide X 18" sump with 50' run out. Ensure wash water drainage/collection and treatment system is functioning and/or frequent water replacement.	Needs to be pumped and have sediment removed.
BMP	Mobile Fueling of Vehicles and Heavy Equipment	615		During fueling operations	Ensure compliance with local and state regulations. Request documentation for 49 CFR 178 for DOT 406. Specifics too numerous to summarize, refer to BMP.	M. Coenen supervised mobile fueling activities. No adverse impacts were observed.

Signature of monitor: _____

Erosion and Sediment Transport Control Measures Inspection Form

Date: 06-02-03

Name of E & E monitor: Erin Murphy

Current weather conditions: Partly cloudy

Last 24 Hr weather conditions: Partly cloudy

DEQ BMP Designation	BMP Name	Inspection Time(s)	Date and Time of last Inspection Time(s)	Minimum Inspection Frequency	Description of BMP	Observations (Effectiveness)
BMP #4	Preserve Existing Vegetation	Continual		Weekly or after .5 inch or greater rain event.	Preserving natural habitat to the greatest extent possible. Preserve in clumps or as individual trees. Using safety fence or flagging to delineate prior to commencing work. Delineate work extent.	Vegetation removal is complete, no additional removal of existing vegetation is anticipated.
BMP # 8	Plastic Sheeting of stockpiles or temporary protection of disturbed areas	0610, 1000, 1530, 1710		Weekly or after .5 inch or greater rain event.	Ensure plastic sheeting is covering all soil stockpiles. Look for rips tears on the surface and runoff seeps under matting. Plastic should be anchored w/10' grid spacing using sandbags or suitable system. Minimum 12" overlap of all seams required. B	No changes from previous inspection.
BMP # 11	Gravel Construction Entrance	1200		Daily	There should be no sediment, rock or woodchip on paved surfaces.	Area is clean.
BMP #13	Dust Control	1200		Continual	Apply water or controls as needed. Keep vehicular traffic in current construction areas and established access routes.	No dust observed. Water trucks were utilized.
BMP # 28	Compost Sock	N/A (not installed)		Weekly or after .5 inch or greater rain event.	May be utilized as a check dam and is not efficient for turbidity or suspended solids. When utilized as check dam, they must be staked. May have down stream skirt for undercut protection.	Not Applicable/Not installed.
BMP	Bio-filter	640, 1000, 1200, 1400, 1700		Weekly or after .5 inch or greater rain event.	Bags should be overlapped by 6". 2 stakes should support each bag. Check for undercutting or end-flow. Inspect for tears and damage. Sediment should not be greater than 1/3 the height of bag.	Bio-filter bags are in good condition.
BMP #29	Sediment Fence	640, 1000, 1200, 1400, 1700		Weekly or after .5 inch or greater rain event.	Ensure bottom of fence is not visible and fence is taut. Posts should be a maximum of 6' apart. At termination point, fence should be facing uphill. Fence should not exceed 3' and storage should not exceed 1.5'. Check for channel formation parallel to	Silt fence and bio-bags were in river upon arrival. E & E recommended that Remtech pull up/remove silt fence and bio-bags in areas where construction crews are not operating and will not be operating in the future.
BMP Type 1 temporary	Tire Wash	1100		Weekly or more frequent during high demand	Dimensions: 40' long x 10' wide X 18" sump with 50' run out. Ensure wash water drainage/collection and treatment system is functioning and/or frequent water replacement.	Needs to be pumped and have sediment removed.
BMP	Mobile Fueling of Vehicles and Heavy Equipment	615		During fueling operations	Ensure compliance with local and state regulations. Request documentation for 49 CFR 178 for DOT 406. Specifics too numerous to summarize, refer to BMP.	A. Murphy supervised mobile fueling activities. No adverse impacts were observed.

Signature of monitor: _____

Erosion and Sediment Transport Control Measures Inspection Form

Date: 06-03-03

Name of E & E monitor: Erin Murphy

Current weather conditions: Sun

Last 24 Hr weather conditions: Sun and warm

DEQ BMP Designation	BMP Name	Inspection Time(s)	Date and Time of last Inspection Time(s)	Minimum Inspection Frequency	Description of BMP	Observations (Effectiveness)
BMP #4	Preserve Existing Vegetation	Continual		Weekly or after .5 inch or greater rain event.	Preserving natural habitat to the greatest extent possible. Preserve in clumps or as individual trees. Using safety fence or flagging to delineate prior to commencing work. Delineate work extent.	Vegetation removal is complete, no additional removal of existing vegetation is anticipated.
BMP # 8	Plastic Sheeting of stockpiles or temporary protection of disturbed areas	0610, 1000, 1530, 1710		Weekly or after .5 inch or greater rain event.	Ensure plastic sheeting is covering all soil stockpiles. Look for rips tears on the surface and runoff seeps under matting. Plastic should be anchored w/10' grid spacing using sandbags or suitable system. Minimum 12" overlap of all seams required. B	No changes from previous inspection.
BMP # 11	Gravel Construction Entrance	1200		Daily	There should be no sediment, rock or woodchip on paved surfaces.	Area is clean.
BMP #13	Dust Control	1200		Continual	Apply water or controls as needed. Keep vehicular traffic in current construction areas and established access routes.	No dust observed. Water trucks were utilized.
BMP # 28	Compost Sock	N/A (not installed)		Weekly or after .5 inch or greater rain event.	May be utilized as a check dam and is not efficient for turbidity or suspended solids. When utilized as check dam, they must be staked. May have down stream skirt for undercut protection.	Not Applicable/Not installed.
BMP	Bio-filter	640, 1000, 1200, 1400, 1700		Weekly or after .5 inch or greater rain event.	Bags should be overlapped by 6". 2 stakes should support each bag. Check for undercutting or end-flow. Inspect for tears and damage. Sediment should not be greater than 1/3 the height of bag.	Bio-filter bags are in good condition.
BMP #29	Sediment Fence	640, 1000, 1200, 1400, 1700		Weekly or after .5 inch or greater rain event.	Ensure bottom of fence is not visible and fence is taut. Posts should be a maximum of 6' apart. At termination point, fence should be facing uphill. Fence should not exceed 3' and storage should not exceed 1.5'. Check for channel formation parallel to	Silt fence and bio-bags were in river upon arrival. E & E recommended that Remtech pull up/remove silt fence and bio-bags in areas where construction crews are not operating and will not be operating in the future. This still has not been done.
BMP Type 1 temporary	Tire Wash	1100		Weekly or more frequent during high demand	Dimensions: 40' long x 10' wide X 18" sump with 50' run out. Ensure wash water drainage/collection and treatment system is functioning and/or frequent water replacement.	Needs to be pumped and have sediment removed.
BMP	Mobile Fueling of Vehicles and Heavy Equipment	615		During fueling operations	Ensure compliance with local and state regulations. Request documentation for 49 CFR 178 for DOT 406. Specifics too numerous to summarize, refer to BMP.	E. Murphy supervised mobile fueling activities. No adverse impacts were observed.

Signature of monitor: _____

Erosion and Sediment Transport Control Measures Inspection Form

Date: 06-04-03

Name of E & E monitor: Erin Murphy

Current weather conditions: Sun

Last 24 Hr weather conditions: Sun and warm

DEQ BMP Designation	BMP Name	Inspection Time(s)	Date and Time of last Inspection Time(s)	Minimum Inspection Frequency	Description of BMP	Observations (Effectiveness)
BMP #4	Preserve Existing Vegetation	Continual		Weekly or after .5 inch or greater rain event.	Preserving natural habitat to the greatest extent possible. Preserve in clumps or as individual trees. Using safety fence or flagging to delineate prior to commencing work. Delineate work extent.	Vegetation removal is complete, no additional removal of existing vegetation is anticipated.
BMP # 8	Plastic Sheeting of stockpiles or temporary protection of disturbed areas	1530, 1710		Weekly or after .5 inch or greater rain event.	Ensure plastic sheeting is covering all soil stockpiles. Look for rips tears on the surface and runoff seeps under matting. Plastic should be anchored w/10' grid spacing using sandbags or suitable system. Minimum 12" overlap of all seams required. B	No changes from previous inspection.
BMP # 11	Gravel Construction Entrance	1300		Daily	There should be no sediment, rock or woodchip on paved surfaces.	Area is clean.
BMP #13	Dust Control	1300, 1400, 1500, 1600, 1700		Continual	Apply water or controls as needed. Keep vehicular traffic in current construction areas and established access routes.	No dust observed. Water trucks were utilized.
BMP # 28	Compost Sock	N/A (not installed)		Weekly or after .5 inch or greater rain event.	May be utilized as a check dam and is not efficient for turbidity or suspended solids. When utilized as check dam, they must be staked. May have down stream skirt for undercut protection.	Not Applicable/Not installed.
BMP	Bio-filter			Weekly or after .5 inch or greater rain event.	Bags should be overlapped by 6". 2 stakes should support each bag. Check for undercutting or end-flow. Inspect for tears and damage. Sediment should not be greater than 1/3 the height of bag.	Bio-filter bags have been moved behind the sheet pile in all areas except that of current sheet pile operations.
BMP #29	Sediment Fence	1500		Weekly or after .5 inch or greater rain event.	Ensure bottom of fence is not visible and fence in taut. Posts should be a maximum of 6' apart. At termination point, fence should be facing uphill. Fence should not exceed 3' and storage should not exceed 1.5'. Check for channel formation parallel to	Silt fence has been removed in areas no longer required. Existing silt fence continues to be ripped nightly by wildlife.
BMP Type 1 temporary	Tire Wash	1500		Weekly or more frequent during high demand	Dimensions: 40' long x 10' wide X 18" sump with 50' run out. Ensure wash water drainage/collection and treatment system is functioning and/or frequent water replacement.	Needs to be pumped and have sediment removed.
BMP	Mobile Fueling of Vehicles and Heavy Equipment	615		During fueling operations	Ensure compliance with local and state regulations. Request documentation for 49 CFR 178 for DOT 406. Specifics too numerous to summarize, refer to BMP.	M. Coenen supervised mobile fueling activities. No adverse impacts were observed.

Signature of monitor: _____

Erosion and Sediment Transport Control Measures Inspection Form

Date: 06-05-03

Name of E & E monitor: Erin Murphy

Current weather conditions: Sun

Last 24 Hr weather conditions: Sunny and hot

DEQ BMP Designation	BMP Name	Inspection Time(s)	Date and Time of last Inspection Time(s)	Minimum Inspection Frequency	Description of BMP	Observations (Effectiveness)
BMP #4	Preserve Existing Vegetation	Continual		Weekly or after .5 inch or greater rain event.	Preserving natural habitat to the greatest extent possible. Preserve in clumps or as individual trees. Using safety fence or flagging to delineate prior to commencing work. Delineate work extent.	Vegetation removal is complete, no additional removal of existing vegetation is anticipated.
BMP # 8	Plastic Sheeting of stockpiles or temporary protection of disturbed areas	1530, 1710		Weekly or after .5 inch or greater rain event.	Ensure plastic sheeting is covering all soil stockpiles. Look for rips tears on the surface and runoff seeps under matting. Plastic should be anchored w/10' grid spacing using sandbags or suitable system. Minimum 12" overlap of all seams required. B	No changes from previous inspection.
BMP # 11	Gravel Construction Entrance	1300		Daily	There should be no sediment, rock or woodchip on paved surfaces.	Area has been recently swept.
BMP #13	Dust Control	1300, 1400, 1500, 1600, 1700		Continual	Apply water or controls as needed. Keep vehicular traffic in current construction areas and established access routes.	No dust observed. Water trucks were utilized.
BMP # 28	Compost Sock	N/A (not installed)		Weekly or after .5 inch or greater rain event.	May be utilized as a check dam and is not efficient for turbidity or suspended solids. When utilized as check dam, they must be staked. May have down stream skirt for undercut protection.	Not Applicable/Not installed.
BMP	Bio-filter			Weekly or after .5 inch or greater rain event.	Bags should be overlapped by 6". 2 stakes should support each bag. Check for undercutting or end-flow. Inspect for tears and damage. Sediment should not be greater than 1/3 the height of bag.	No changes from previous inspection. Bio-bags remain in good condition.
BMP #29	Sediment Fence	1500		Weekly or after .5 inch or greater rain event.	Ensure bottom of fence is not visible and fence in taut. Posts should be a maximum of 6' apart. At termination point, fence should be facing uphill. Fence should not exceed 3' and storage should not exceed 1.5'. Check for channel formation parallel to	Silt fence has been removed in areas no longer required. Existing silt fence continues to be ripped nightly by wildlife.
BMP Type 1 temporary	Tire Wash	1500		Weekly or more frequent during high demand	Dimensions: 40' long x 10' wide X 18" sump with 50' run out. Ensure wash water drainage/collection and treatment system is functioning and/or frequent water replacement.	Needs to be pumped and have sediment removed.
BMP	Mobile Fueling of Vehicles and Heavy Equipment	615		During fueling operations	Ensure compliance with local and state regulations. Request documentation for 49 CFR 178 for DOT 406. Specifics too numerous to summarize, refer to BMP.	A. Murphy supervised mobile fueling activities. No adverse impacts were observed.

Signature of monitor: _____

Erosion and Sediment Transport Control Measures Inspection Form

Date: 07-01-03

Name of E & E monitor: Andrew Murphy

Current weather conditions: Sun

Last 24 Hr weather conditions: Sunny and hot

DEQ BMP Designation	BMP Name	Inspection Time(s)	Date and Time of last Inspection Time(s)	Minimum Inspection Frequency	Description of BMP	Observations (Effectiveness)
BMP #4	Preserve Existing Vegetation	Continual		Weekly or after .5 inch or greater rain event.	Preserving natural habitat to the greatest extent possible. Preserve in clumps or as individual trees. Using safety fence or flagging to delineate prior to commencing work. Delineate work extent.	Vegetation removal is complete, no additional removal of existing vegetation is anticipated.
BMP # 8	Plastic Sheeting of stockpiles or temporary protection of disturbed areas			Weekly or after .5 inch or greater rain event.	Ensure plastic sheeting is covering all soil stockpiles. Look for rips tears on the surface and runoff seeps under matting. Plastic should be anchored w/10' grid spacing using sandbags or suitable system. Minimum 12" overlap of all seams required. B	NA
BMP # 11	Gravel Construction Entrance			Daily	There should be no sediment, rock or woodchip on paved surfaces.	Area needs to be cleaned.
BMP #13	Dust Control	0800, 1200		Continual	Apply water or controls as needed. Keep vehicular traffic in current construction areas and established access routes.	No dust observed. Water trucks were utilized.
BMP # 28	Compost Sock	N/A (not installed)		Weekly or after .5 inch or greater rain event.	May be utilized as a check dam and is not efficient for turbidity or suspended solids. When utilized as check dam, they must be staked. May have down stream skirt for undercut protection.	Not Applicable/Not installed.
BMP	Bio-filter			Weekly or after .5 inch or greater rain event.	Bags should be overlapped by 6". 2 stakes should support each bag. Check for undercutting or end-flow. Inspect for tears and damage. Sediment should not be greater then 1/3 the height of bag.	NA
BMP #29	Sediment Fence			Weekly or after .5 inch or greater rain event.	Ensure bottom of fence is not visible and fence in taut. Posts should be a maximum of 6' apart. At termination point, fence should be facing uphill. Fence should not exceed 3' and storage should not exceed 1.5'. Check for channel formation parallel to	NA
BMP Type 1 temporary	Tire Wash	1200		Weekly or more frequent during high demand	Dimensions: 40' long x 10' wide X 18" sump with 50' run out. Ensure wash water drainage/collection and treatment system is functioning and/or frequent water replacement.	Needs to be pumped and have sediment removed.
BMP	Mobile Fueling of Vehicles and Heavy Equipment	615		During fueling operations	Ensure compliance with local and state regulations. Request documentation for 49 CFR 178 for DOT 406. Specifics too numerous to summarize, refer to BMP.	A. Murphy supervised mobile fueling activities. No adverse impacts were observed.

Signature of monitor: _____

Erosion and Sediment Transport Control Measures Inspection Form

Date: 07-02-03

Name of E & E monitor: Andrew

Current weather conditions: Sun

Last 24 Hr weather conditions: Sunny and hot

DEQ BMP Designation	BMP Name	Inspection Time(s)	Date and Time of last Inspection Time(s)	Minimum Inspection Frequency	Description of BMP	Observations (Effectiveness)
BMP #4	Preserve Existing Vegetation	Continual		Weekly or after .5 inch or greater rain event.	Preserving natural habitat to the greatest extent possible. Preserve in clumps or as individual trees. Using safety fence or flagging to delineate prior to commencing work. Delineate work extent.	Vegetation removal is complete, no additional removal of existing vegetation is anticipated.
BMP # 8	Plastic Sheeting of stockpiles or temporary protection of disturbed areas			Weekly or after .5 inch or greater rain event.	Ensure plastic sheeting is covering all soil stockpiles. Look for rips tears on the surface and runoff seeps under matting. Plastic should be anchored w/10' grid spacing using sandbags or suitable system. Minimum 12" overlap of all seams required. B	NA
BMP # 11	Gravel Construction Entrance			Daily	There should be no sediment, rock or woodchip on paved surfaces.	Area needs to be cleaned.
BMP #13	Dust Control	0800, 1200		Continual	Apply water or controls as needed. Keep vehicular traffic in current construction areas and established access routes.	No dust observed. Water trucks were utilized.
BMP # 28	Compost Sock	N/A (not installed)		Weekly or after .5 inch or greater rain event.	May be utilized as a check dam and is not efficient for turbidity or suspended solids. When utilized as check dam, they must be staked. May have down stream skirt for undercut protection.	Not Applicable/Not installed.
BMP	Bio-filter			Weekly or after .5 inch or greater rain event.	Bags should be overlapped by 6". 2 stakes should support each bag. Check for undercutting or end-flow. Inspect for tears and damage. Sediment should not be greater than 1/3 the height of bag.	NA
BMP #29	Sediment Fence			Weekly or after .5 inch or greater rain event.	Ensure bottom of fence is not visible and fence in taut. Posts should be a maximum of 6' apart. At termination point, fence should be facing uphill. Fence should not exceed 3' and storage should not exceed 1.5'. Check for channel formation parallel to	NA
BMP Type 1 temporary	Tire Wash	1200		Weekly or more frequent during high demand	Dimensions: 40' long x 10' wide X 18" sump with 50' run out. Ensure wash water drainage/collection and treatment system is functioning and/or frequent water replacement.	Needs to be pumped and have sediment removed.
BMP	Mobile Fueling of Vehicles and Heavy Equipment	615		During fueling operations	Ensure compliance with local and state regulations. Request documentation for 49 CFR 178 for DOT 406. Specifics too numerous to summarize, refer to BMP.	A. Murphy supervised mobile fueling activities. No adverse impacts were observed.

Signature of monitor: _____

C

Photodocumentation



Photo 1 Upland vegetation at far northwest portion of site.
Direction: Southwest



Photo 2 Upland vegetation just above bank along northwest beach.
Direction: Southwest

MCCORMICK AND BAXTER CREOSOTING COMPANY SITE
Portland, Oregon

Date: 5/29/03 Time: 9:03

Taken by: Noreen Roster

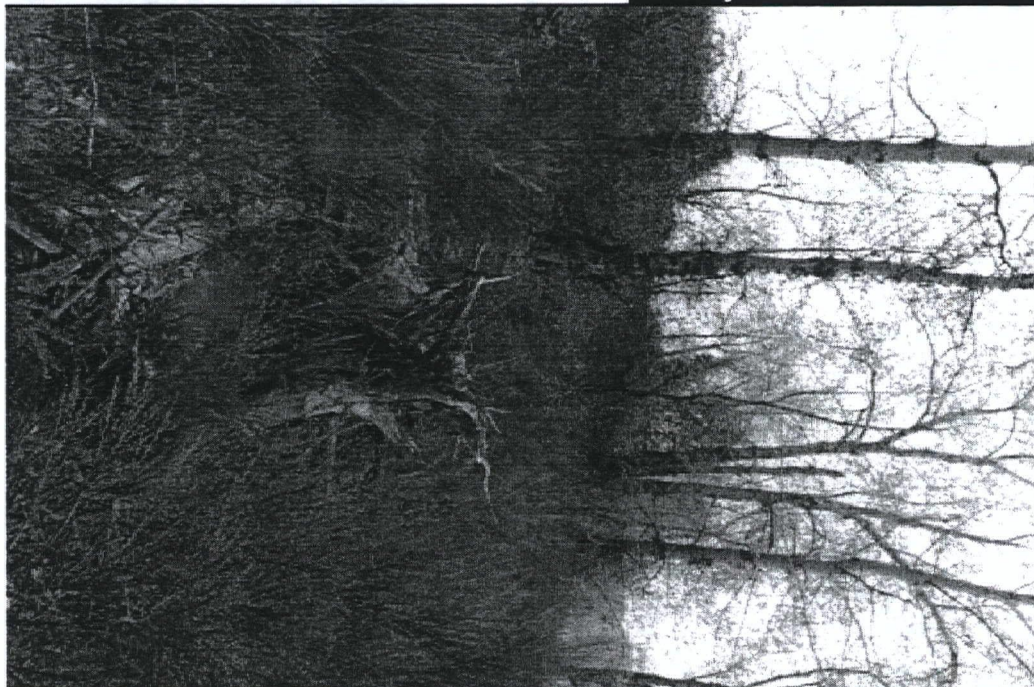


Photo 3 Dense vegetation along bank.
Direction: East

Date: 5/29/03 Time: 9:05

Taken by: Noreen Roster

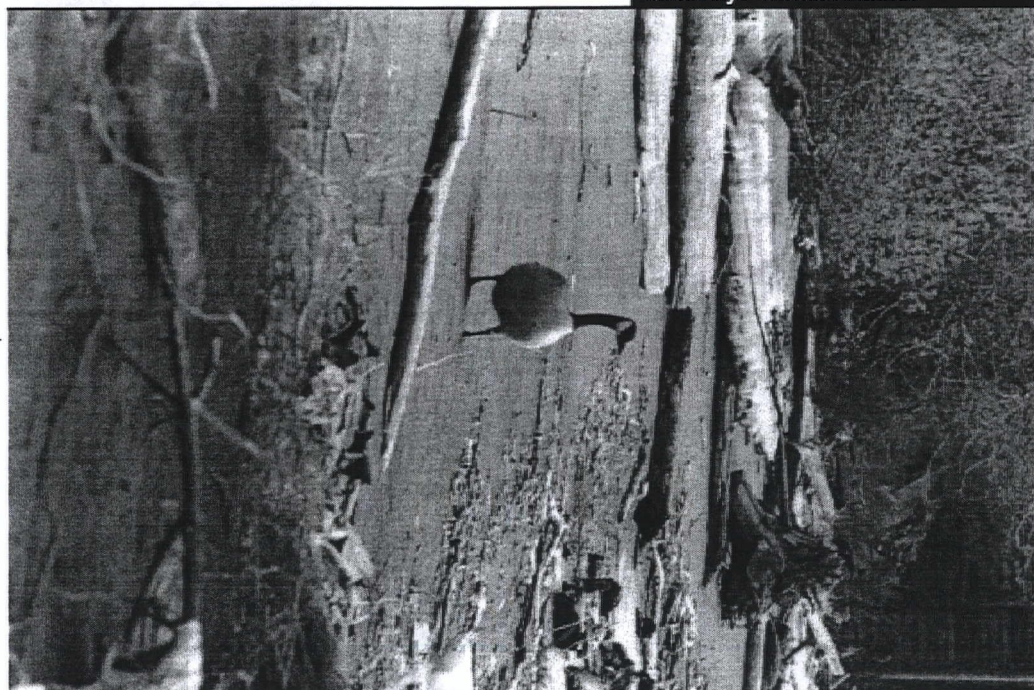


Photo 4 Canadian goose on northwest beach with woody debris.
Direction: Southeast



Photo 5 Osprey building nest.
Direction: South



Photo 6 Northwest beach.
Direction: West



Photo 7 Vegetation along bank of northwest beach.
Direction: Southeast



Photo 8 Snag and woody debris along northwest beach.
Direction: Southeast



Photo 9 Woody debris near bulkhead.
Direction: Northwest



Photo 10 Vegetation and woody debris along bank of southeast beach.
Direction: Southeast



Photo 11 Woody debris along southeast beach.
Direction: Southeast



Photo 12 Upland vegetation at south portion of site.
Direction: Southeast



Photo 13 Upland vegetation of south-eastern portion of site.
Direction: East



Photo 14 Upland vegetation of central portion of site.
Direction: Northeast

McCORMICK AND BAXTER CREOSOTING COMPANY SITE
Portland, Oregon

Date: 5/29/03

Time: 9:23

Taken by: Noreen Roster



Photo 15 Nutria or beaver activity.
Direction: East

Date: 4/7/03

Time: 13:22

Taken by: Mike Coenen



Photo 16 Crew is moving logs waterward on southeast beach to prepare for installation of silt fence.
Direction: Northwest

McCORMICK AND BAXTER CREOSOTING COMPANY SITE
Portland, Oregon

Date: 4/1/03

Time: 8:05

Taken by: Andrew Murphy



Photo 17 View of boom and log displacement at southeast beach.
Direction: West

Date: 4/30/03

Time: 9:32

Taken by: Mike Coenen



Photo 18 Tree removal along the northwest bank.
Direction: East

McCORMICK AND BAXTER CREOSOTING COMPANY SITE
Portland, Oregon

Date: 4/28/03

Time: 9:30

Taken by: Erin Murphy



Photo 19 Silt fence along northwest beach.
Direction: Northwest

Date: 4/28/03

Time: 8:11

Taken by: Andrew Murphy

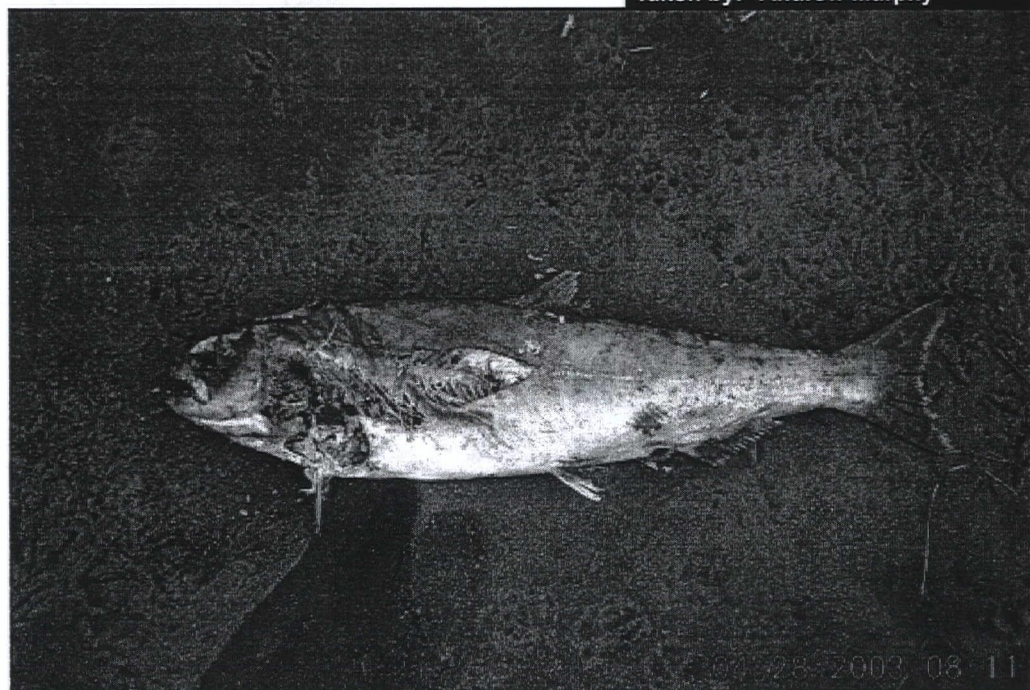


Photo 20 Dead *Oncorhynchus tshawytscha* found on northwest beach.
Direction: Down

MCCORMICK AND BAXTER CREOSOTING COMPANY SITE
Portland, Oregon

Date: 5/27/03 Time: 8:45

Taken by: Erin Murphy

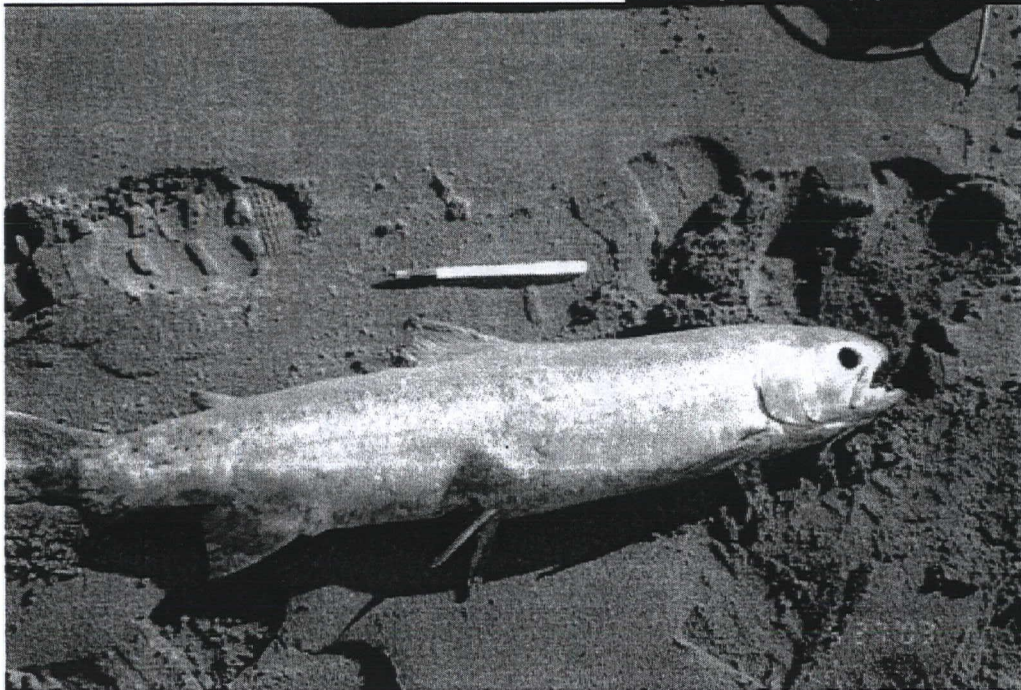


Photo 21 Dead *Oncorhynchus mykiss* found on northwest beach.
Direction: Down

Date: 5/1/03 Time: 10:03

Taken by: Andrew Murphy

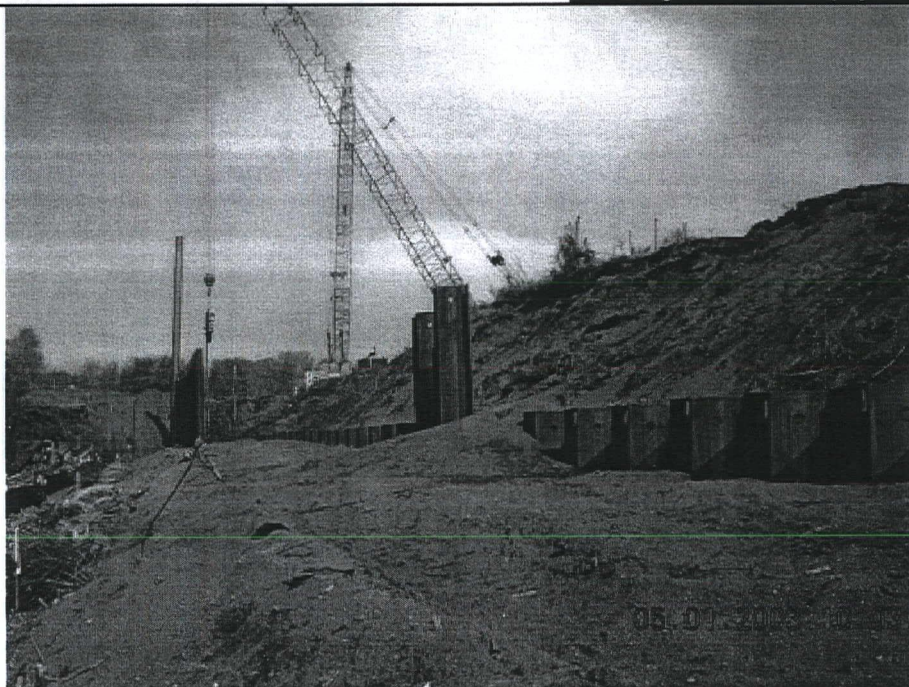


Photo 22 View of bank erosion at southeast bank.
Direction: Northwest

Date: 7/1/03

Time: 16:46

Taken by: Andrew Murphy



Photo 23 Observed sheen in water.
Direction: West

Date: 6/2/03

Time: 7:33

Taken by: Erin Murphy



Photo 24 Silt fence and bio-bags on northwest beach after a high water event.
Direction: Northwest

MCCORMICK AND BAXTER CREOSOTING COMPANY SITE
Portland, Oregon

Date: 6/2/03

Time: 7:33

Taken by: Erin Murphy



Photo 25 Silt fence and bio-bags on southeast beach after a high water event.
Direction: Northwest

Date: 7/29/03

Time: 9:00

Taken by: Andrew Murphy



Photo 26 Jute mat installation along southeast bank.
Direction: Northwest

McCORMICK AND BAXTER CREOSOTING COMPANY SITE
Portland, Oregon

Date: 7/29/03 Time: 9:53

Taken by: Andrew Murphy

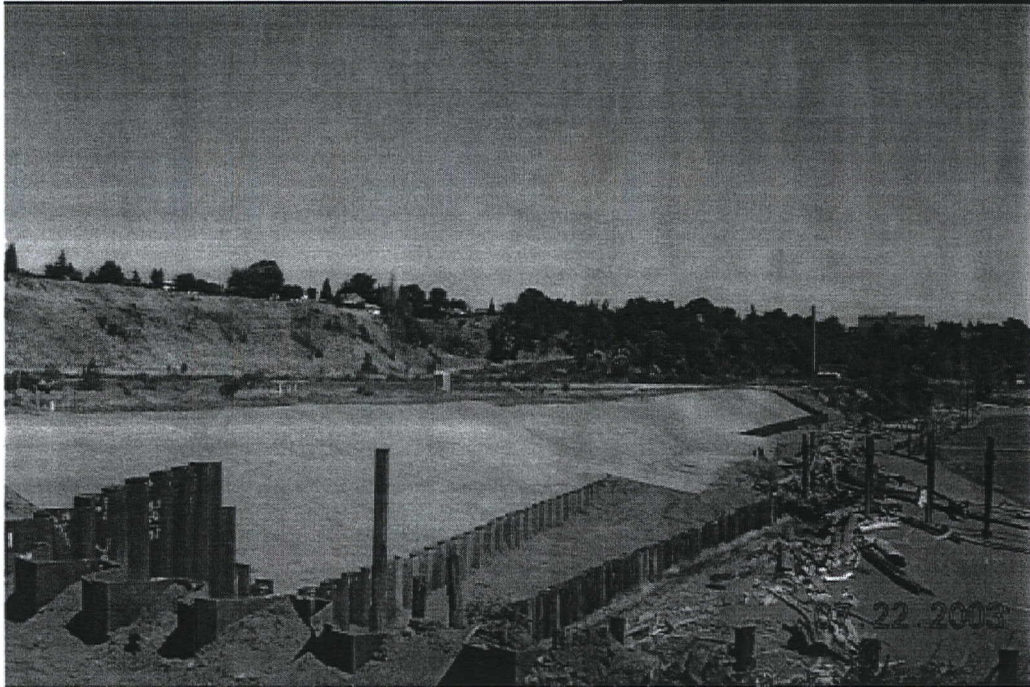


Photo 27 Jute mat on southeast bank.
Direction: East

Date: 7/21/03 Time: 15:57

Taken by: Mike Coenen



Photo 28 Osprey at bulkhead during the clean-up phase of construction.
Direction: West



Record Drawings

SEATTLE, WA 98101

Barrier Wall Plan
March 31, 2003 to July 31, 2003
Four Drawings

D

**Sewer Line Monitoring
Memorandum**



PACRIM GEOTECHNICAL INC.
506 SW 6TH AVENUE, SUITE. 1006, PORTLAND, OR 97204

GEOTECHNICAL ENGINEERING
AND APPLIED EARTH SCIENCES

Date	May 13, 2003	Project	McCormick & Baxter
To	Mr. Mark Ochsner Ecology & Environment	Subject	Ground Movement Monitoring
From	André D. Maré, P.E.		

FINAL MEMORANDUM NO. 4

This is our final memorandum summarizing ground movement monitoring related to protection of two City of Portland sewer lines in the vicinity of ongoing slurry trench construction.

As of May 8, the trench had been backfilled full-depth to approximately Station 18+50, beyond the monitoring instruments. As such, ground movement monitoring has been discontinued.

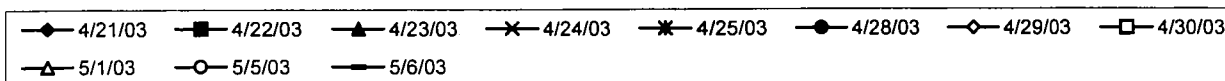
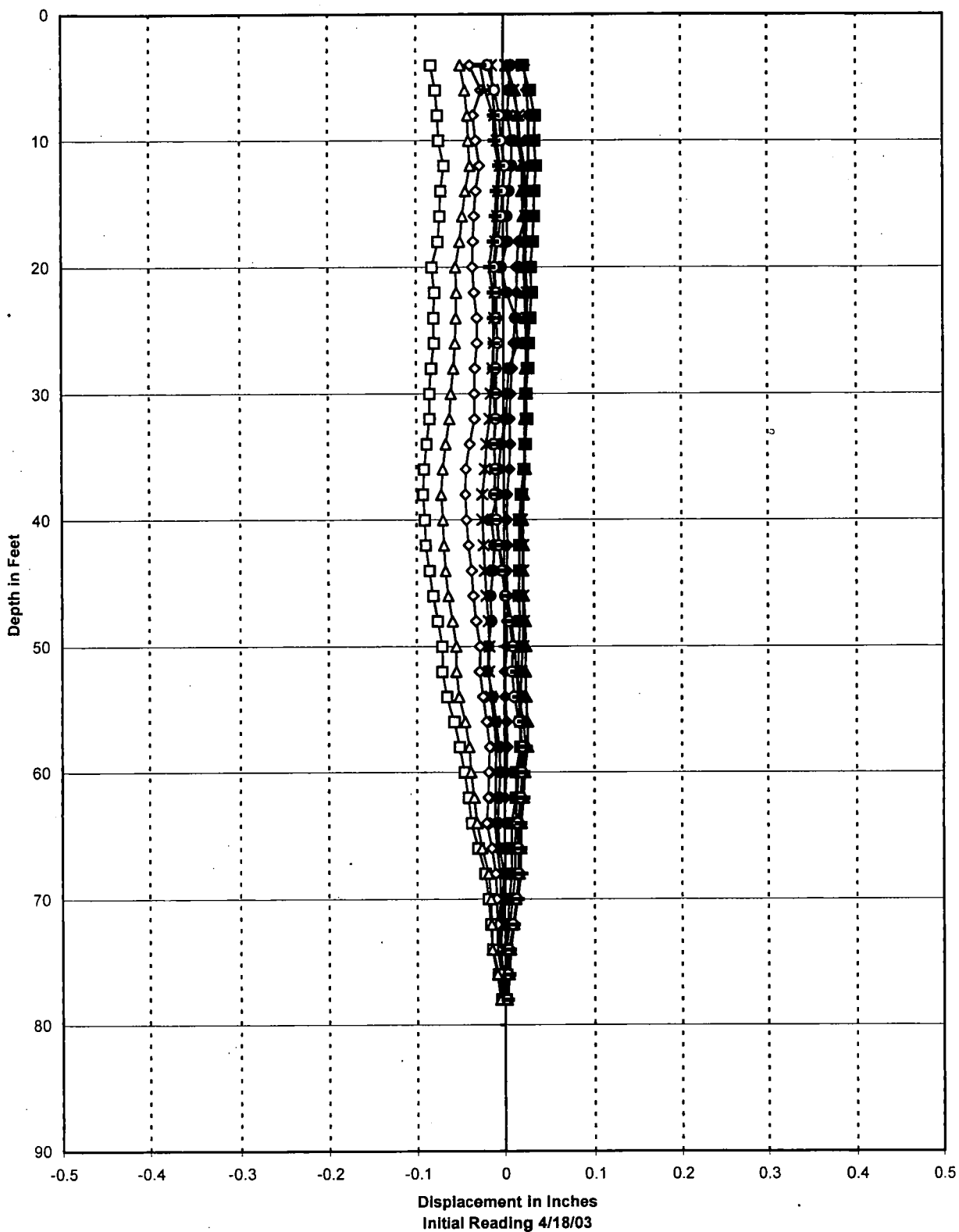
Three ground movement monitoring instruments were installed on April 17 and 18, 2003. Each consists of a slope inclinometer casing with attached Sondex settlement monitoring rings. The instruments were used to measure lateral and vertical ground movement in the vicinity of the barrier wall trench. Instrument locations are approximately as follows:

- I-1 Sta. 15+80, 20 feet from trench centerline
- I-2 Sta. 15+80, 44 feet from trench centerline
- I-3 Sta. 18+00, 49 feet from trench centerline

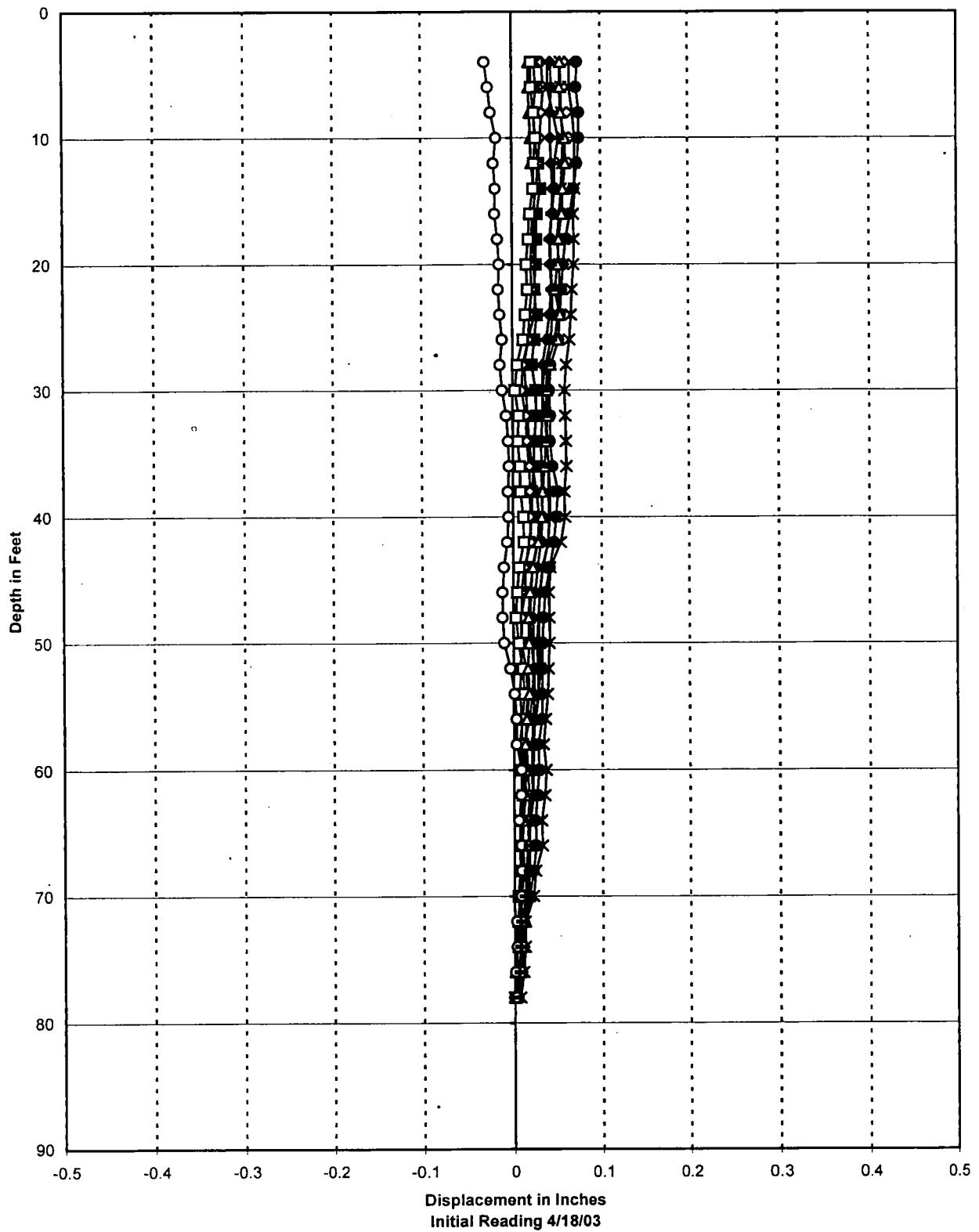
Review of all data indicates that lateral and vertical ground movements were negligible for all three instruments. Lateral and vertical movements recorded were all far less than the amounts that PacRim had recommended for triggering pipe protection measures. Attached are plots of cumulative lateral movement on both axes for each inclinometer.

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intentionally left blank.

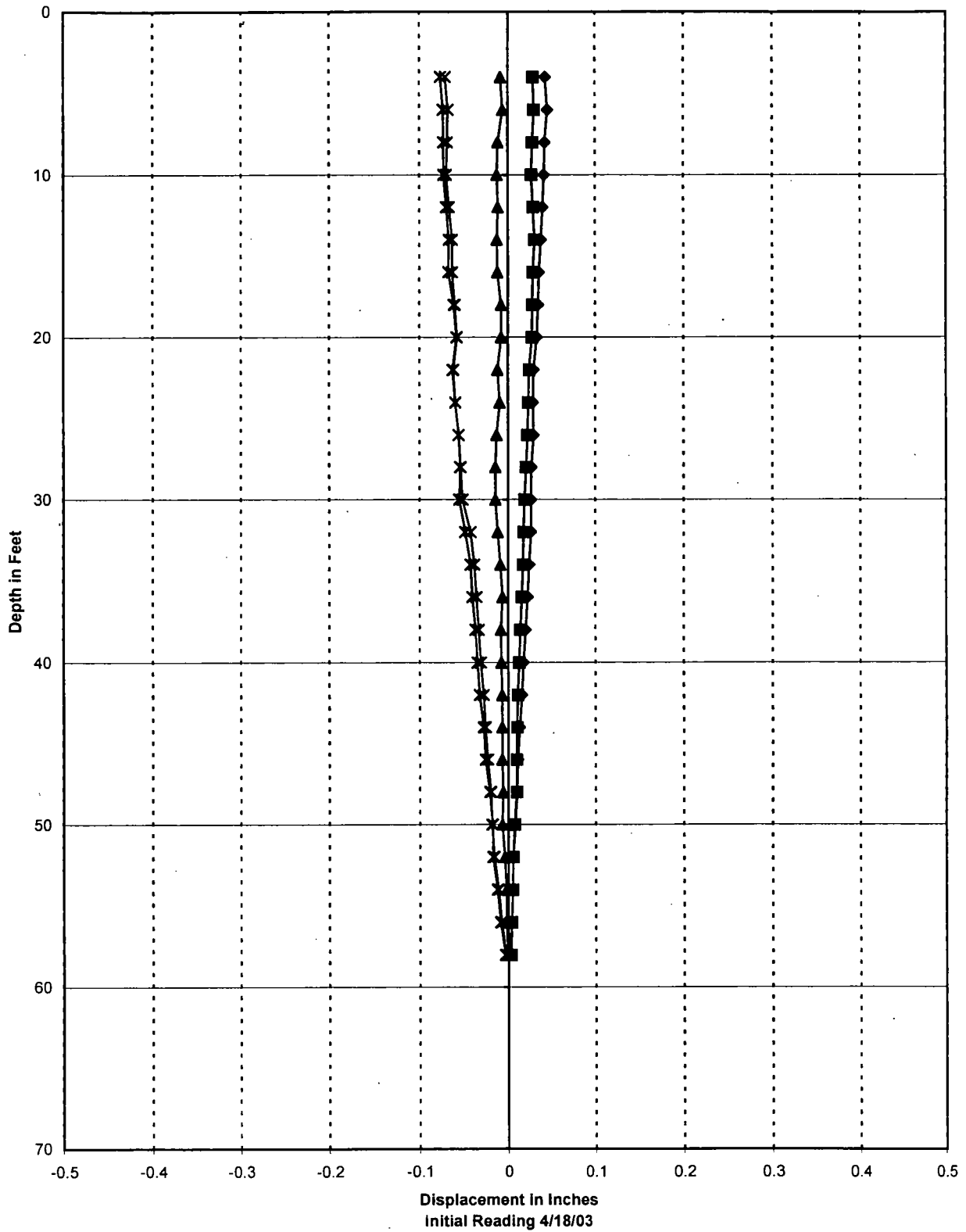
**Cumulative Displacement
A-Axis
Inclinometer I-1**



**Cumulative Displacement
B-Axis
Inclinometer I-1**

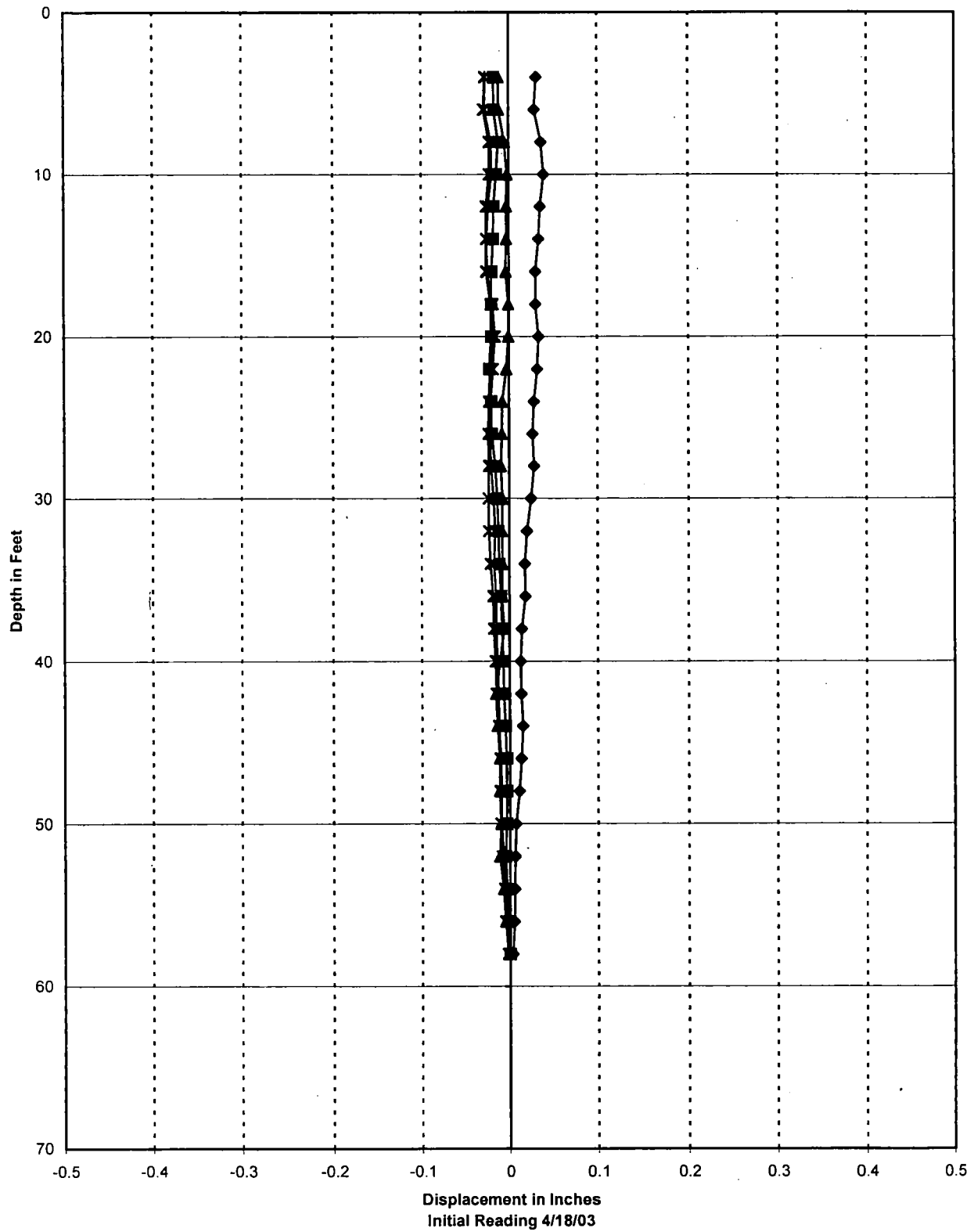


**Cumulative Displacement
A-Axis
Inclinometer I-2**



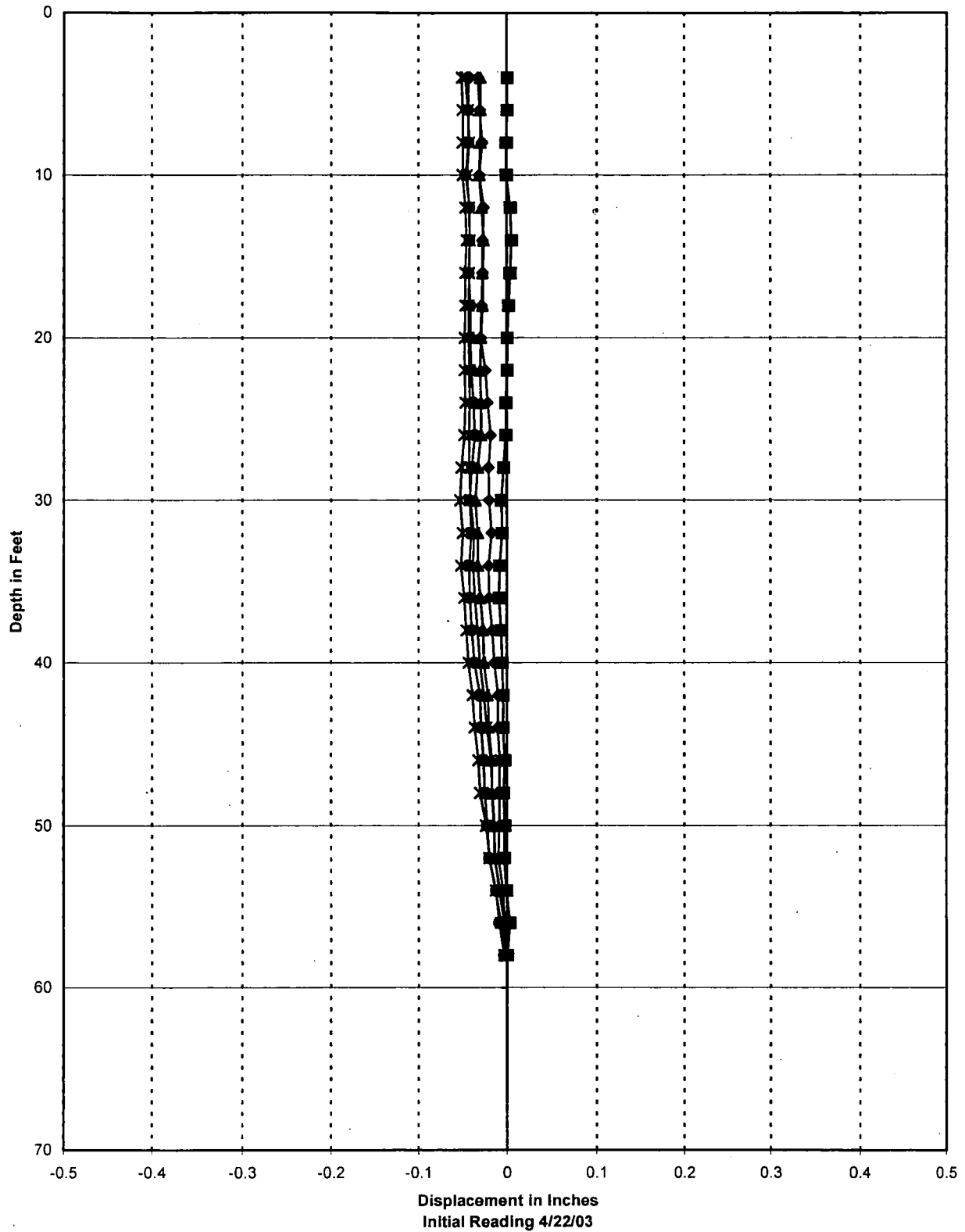
◆ 4/21/03
■ 4/22/03
▲ 4/24/03
✕ 4/28/03
* 4/30/03

Cumulative Displacement
B-Axis
Inclinometer I-2



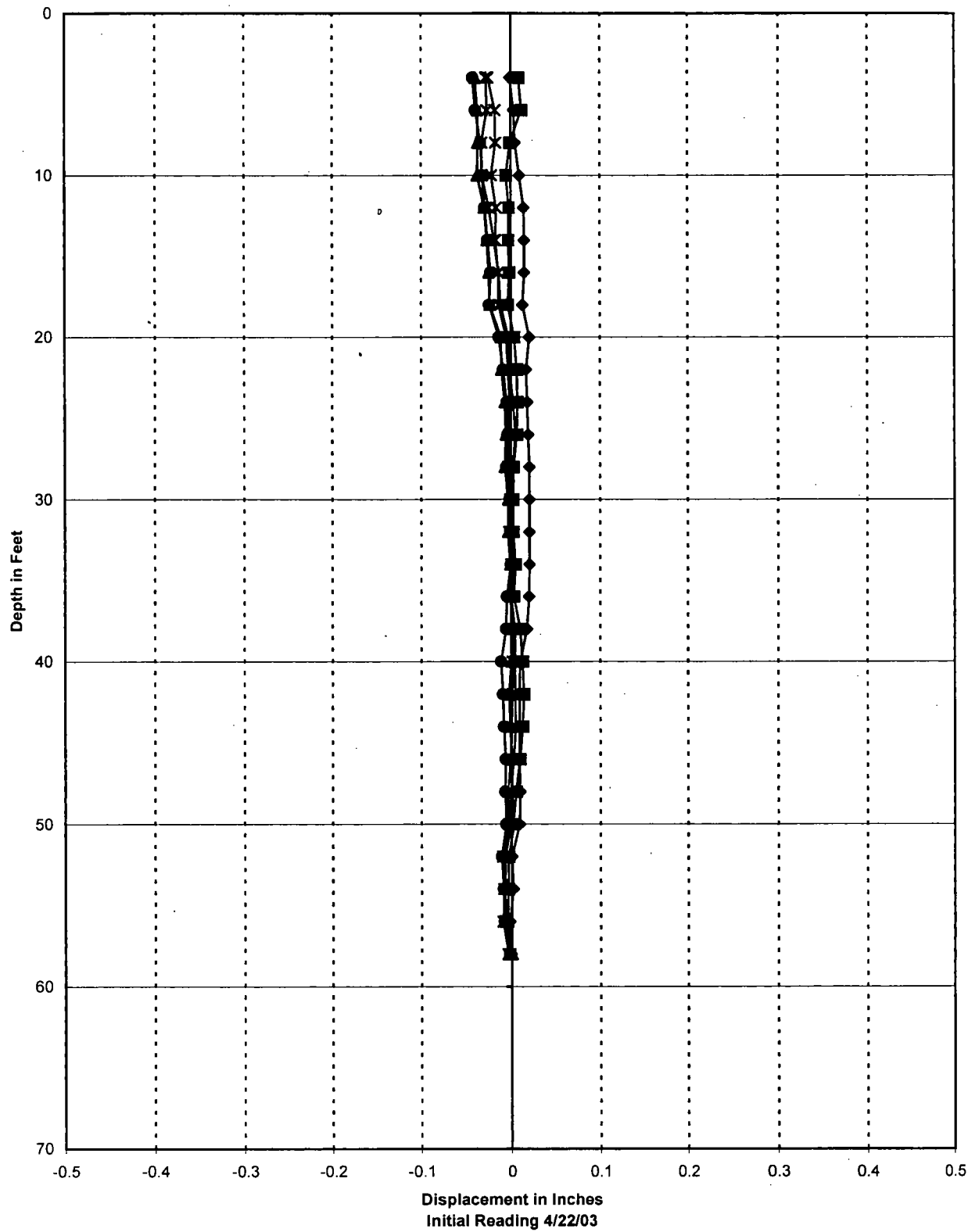
◆ 4/21/03 ■ 4/22/03 ▲ 4/24/03 ✕ 4/28/03 ✕ 4/30/03

**Cumulative Displacement
A-Axis
Inclinometer I-3**



◆ 4/24/03
■ 4/30/03
▲ 5/5/03
✕ 5/6/03
✱ 5/7/03
● 5/8/03

**Cumulative Displacement
B-Axis
Inclinometer I-3**



E

Archaeological Monitoring Protocol and Report

ARCHAEOLOGICAL MONITORING PROTOCOL

MCCORMICK AND BAXTER CREOSOTING COMPANY SUPERFUND SITE PORTLAND, OREGON



DEQ

State of Oregon
Department of
Environmental
Quality



December 30, 2002

**OREGON STATE DEPARTMENT OF ENVIRONMENTAL QUALITY
U.S. ENVIRONMENTAL PROTECTION AGENCY**

BACKGROUND

The McCormick & Baxter Creosoting Company Superfund Site (McCormick & Baxter Facility) is located on the northeast shore of the Willamette River between Swan Island and the St. John's Bridge, just upstream of the Burlington Northern Railroad Bridge, and includes 43 acres upland and 25 acres of contaminated river sediments. As a result of improper handling and disposal practices, soil and groundwater at the site, as well as sediment in the adjacent river are contaminated with elevated levels of wood-treating chemicals. The site was placed on the National Priorities List (NPL or Superfund List) by the US Environmental Protection Agency (EPA), in June 1994. Through a cooperative agreement with EPA, DEQ is the Lead Agency for investigation and cleanup of the site under the Federal Comprehensive Environmental Compensation and Liability Act (CERCLA), commonly known as the Superfund program. As the lead agency, DEQ is facilitating cultural resources work at the site on EPA's behalf, and has hired Archaeological Investigations Northwest (AINW) to help with this task.

Six Tribal governments have been identified as having an interest in the cultural resource work at the McCormick and Baxter Facility, and they include:

- Confederated Tribes of the Grand Ronde Community of Oregon,
- Confederated Tribes of Siletz Indians of Oregon,
- Confederated Tribes of the Warm Springs Reservation of Oregon,
- Confederated Tribes of the Umatilla Indian Reservation,
- Confederated Tribes and Bands of the Yakama Indian Nation, and
- The Nez Perce Tribe.

Conducting archaeological surveys prior to any ground-disturbing activity is intended to determine if the proposed activity is likely to affect significant archaeological resources. There is, however, a possibility that archaeological resources may be encountered during project-related activity even with a thorough and systematic survey. It is important that any "discovered" human remains and associated cultural materials and deposits be treated with care and respect and protected from further disturbance and exposure to weather, as outlined in these protocols. These clarify and establish mutually acceptable protocols to process inadvertent discoveries of potential historic properties, human remains, funerary objects and other cultural items during activities undertaken under CERCLA at the site.

FORMALIZING PROTOCOLS

All of the above listed Tribal governments, EPA and DEQ have worked towards developing these protocols. A letter of agreement will be used to formalize these protocols, signifying that all parties agree to abide by these protocols during construction at the McCormick and Baxter Facility.

ON-SITE PROCEDURES

To assure compliance with the National Historic Preservation Act (16 USC 470) and applicable Oregon statutes (ORS 97.740 et seq., 358.905 et seq., and 390.235 et seq.), the following procedures have been developed to address potential inadvertent discoveries of cultural materials and deposits (including sacred objects, funerary objects, and objects of cultural

patrimony as defined in ORS 358.905) and Indian burials and human remains (as defined in ORS 358.905) during ground disturbing activities at the site.

Pre-Construction Ceremonies

Tribal governments may desire to perform pre-construction ceremonies at the site. DEQ will give two weeks notice, by e-mail, of the construction start date. Tribes will coordinate with DEQ so that scheduling and logistics of pre-construction ceremonies will not delay the construction schedule.

Notification of Ground Disturbing Work

DEQ will notify the six interested Tribes by e-mail in advance of any ground disturbing field work. The ground disturbing field work anticipated to occur over the next several years include:

- installation of monitoring probes or wells,
- installation of a subsurface barrier wall,
- construction of a sediment cap, and
- construction of the upland soil cap.

The notice will be given in as much advance of the field work as is possible. Attachment A provides the list of Tribal members and their email address who will be notified by DEQ. Changes to this list will be made if requested by the respective Tribes.

Professional Archaeologist On-Site

DEQ has retained the services of a professional archaeologist, AINW, as defined in ORS 97.740 and ORS 390.235(6) (b). AINW will provide on-site monitoring when ground disturbing work is conducted within the boundaries of the "archaeological sensitivity area" as determined in the cultural resource survey completed in September 2002 for the McCormick & Baxter Facility. The "archaeological sensitivity area" is shown in Figure 1.

For work conducted outside the "archaeological sensitivity area", AINW will be available to respond to requests by DEQ for monitoring in the event that potential cultural resources are encountered by field personnel.

Tribal Representatives On-Site

Interested Tribes are welcome to provide Tribal monitors during on-site activity. Since the site is contaminated with hazardous substances, Tribal representatives will be required to comply with OSHA requirements provided in 29 CFR 1910.120 (aka, HAZWOPER). The application of these requirements will vary, depending on the type of activity at the site, and the proximity of the monitors to the activity. The requirements may include:

- Supervision by someone who is appropriately trained for hazardous substance sites, a briefing on Health and Safety issues, and sign-in;
- Restriction from the immediate area of the work;
- Prohibition of handling contaminated material;
- Use of personal protective equipment (PPE) such as rubber booties, that will be provided at the site; and
- 24 or 40 Hour Hazardous Waste Operations (HAZWOPER) health and safety training.

Additionally, all on-site personnel, including Tribal monitors, are subject to the directions of the on-site Health and Safety Officer at all times.

Discovery

At the discretion of the monitoring archaeologist, excavation or other ground-disturbing activities may be slowed or halted at any time a suspected archaeological object or archaeological site (as defined in ORS 358.905) is encountered. The objective of this slowing or halting of ground-disturbing activity is to allow the archaeologist to confirm and/or make a preliminary assessment of the discovery. All requests for such slowing or halting of construction activity must be communicated to the contractor's personnel through DEQ's on-site personnel.

Figure 2 identifies the steps to be taken in the event of a potential discovery. Should the monitoring archaeologist determine that a possible significant cultural resource has been encountered, he or she may direct the immediate cessation of all ground-disturbing activity in the vicinity of the discovery. The monitoring archaeologist will work with DEQ's contractor to determine when and where work can continue.

At the request of the monitoring archaeologist, DEQ's contractor will either:

- assist in securing access to the location of the discovery and take appropriate measures to protect the location of the discovery from rain, stormwater, and other possible disturbances, or
- assist the archaeologist in moving the artifacts to a protected and secure area of the site away from the immediate construction area.

The monitoring archaeologist will immediately notify the designated DEQ and EPA representative of the discovery. Any discovery of likely or demonstrated cultural materials or deposits will also require prompt notification of the Oregon State Historic Preservation Office, and representatives of the six Tribes. This notification will be made by DEQ.

In the event that likely or confirmed human remains are encountered, the monitoring archaeologist will be responsible for immediately notifying the designated representatives of DEQ and EPA (pursuant to ORS 97.745(4)). DEQ will then notify the Oregon State Police, the Oregon State Historic Preservation Office (SHPO), the six Tribes referenced above, and the Commission on Indian Services.

Human remains and associated funerary objects shall remain in place, with minimal disturbance by the county medical examiner in completing his or her work.

If the site is determined not to be a crime scene, and the human remains are identified as Native American, DEQ shall continue to secure the remains and any associated funerary objects in place, until their final disposition on-site in a predetermined location. DEQ shall give due consideration to and honor, to the extent possible, any request by the Tribe to leave the remains and/or other cultural items in place.

Upon completion of the Archaeological Monitoring Protocol, an area of the site will be designated as a staging area for the archaeologist and Tribal representatives to more closely examine artifacts and determine if re-burial on site or decontamination off-site is appropriate. Also, an area of the site will be identified, in consultation with the Tribes, for reburial of discovered artifacts that are contaminated, and unlikely to undergo de-contamination procedures, such as textiles and baskets. The location of this area is known only to the Tribes, DEQ, EPA and DEQ's contractor (Ecology & Environment).

CONFIDENTIALITY

DEQ and EPA shall make their best efforts, in accordance with State and Federal law, to ensure that its appropriate personnel and contractors keep the discovery of any found or suspected human remains, other cultural items, and potential historic properties confidential. Contractors and agency personnel are prohibited from contacting the media or any third party or otherwise sharing information regarding the discovery with any member of the public, and to immediately notify the DEQ and EPA of and direct any inquiry from the media or public. Prior to any release, DEQ, EPA and the Tribes shall concur on the amount of information, if any, to be released to the public, any third party, and the media and the procedures for such a release, to the extent permitted by law.

DISPUTE RESOLUTION

All Parties will strive to address and resolve disagreements informally and with the designated DEQ and EPA representatives. In the event agreement is not reached to the satisfaction of the Tribal representative(s), the matter will be raised to the next level of DEQ, EPA and Tribal management. Should agreement continue to elude resolution, the matter will be raised to DEQ's Division Manager, EPA's Regional Administrator and the Chair of the Tribe(s). Each Party reserves any and all rights it may otherwise have to enforce its rights or seek resolution of the dispute under applicable law.

Figure 1
Location Aerial Showing Archaeological Sensitivity Area
McCormick & Baxter Facility, Portland, Oregon

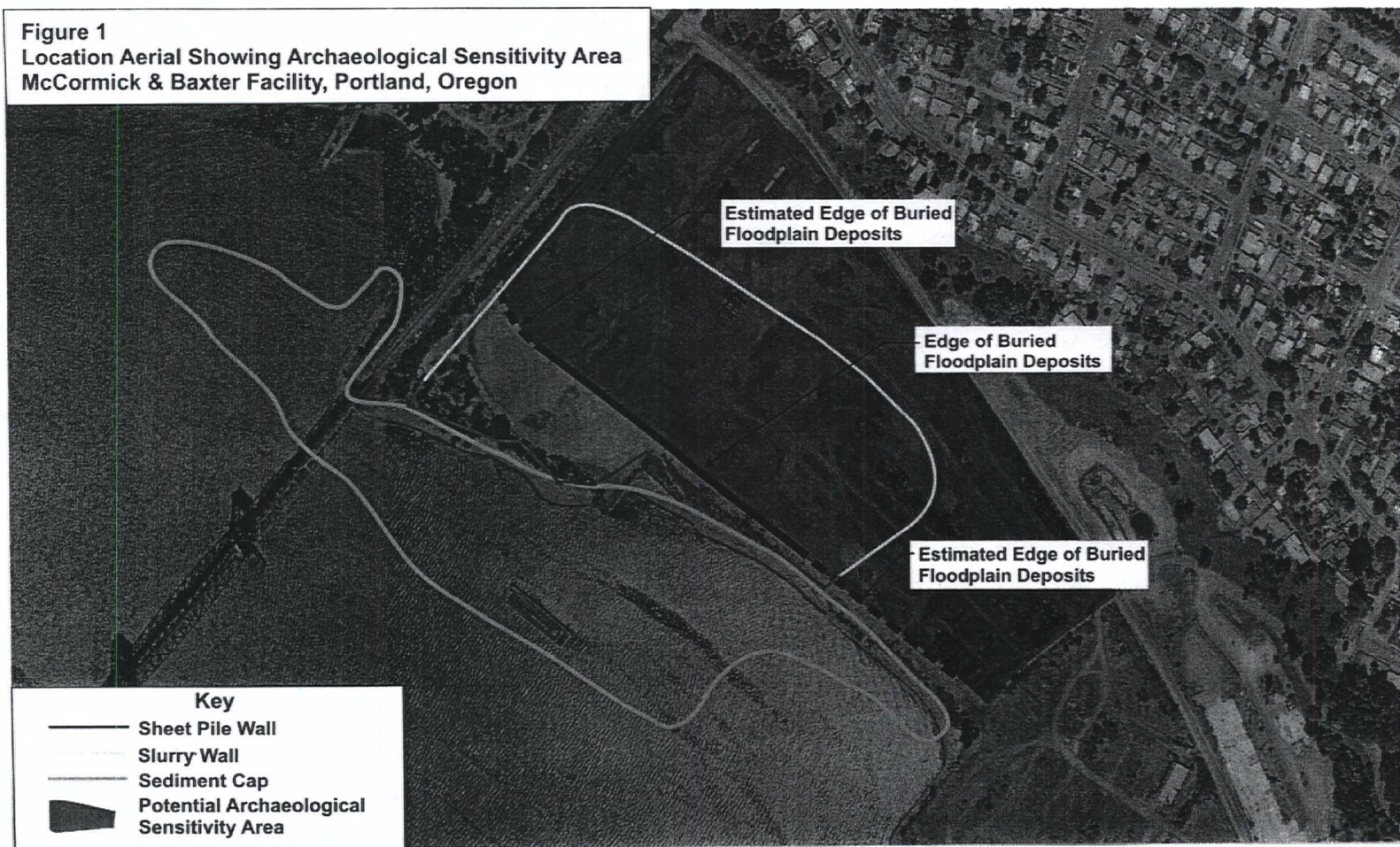
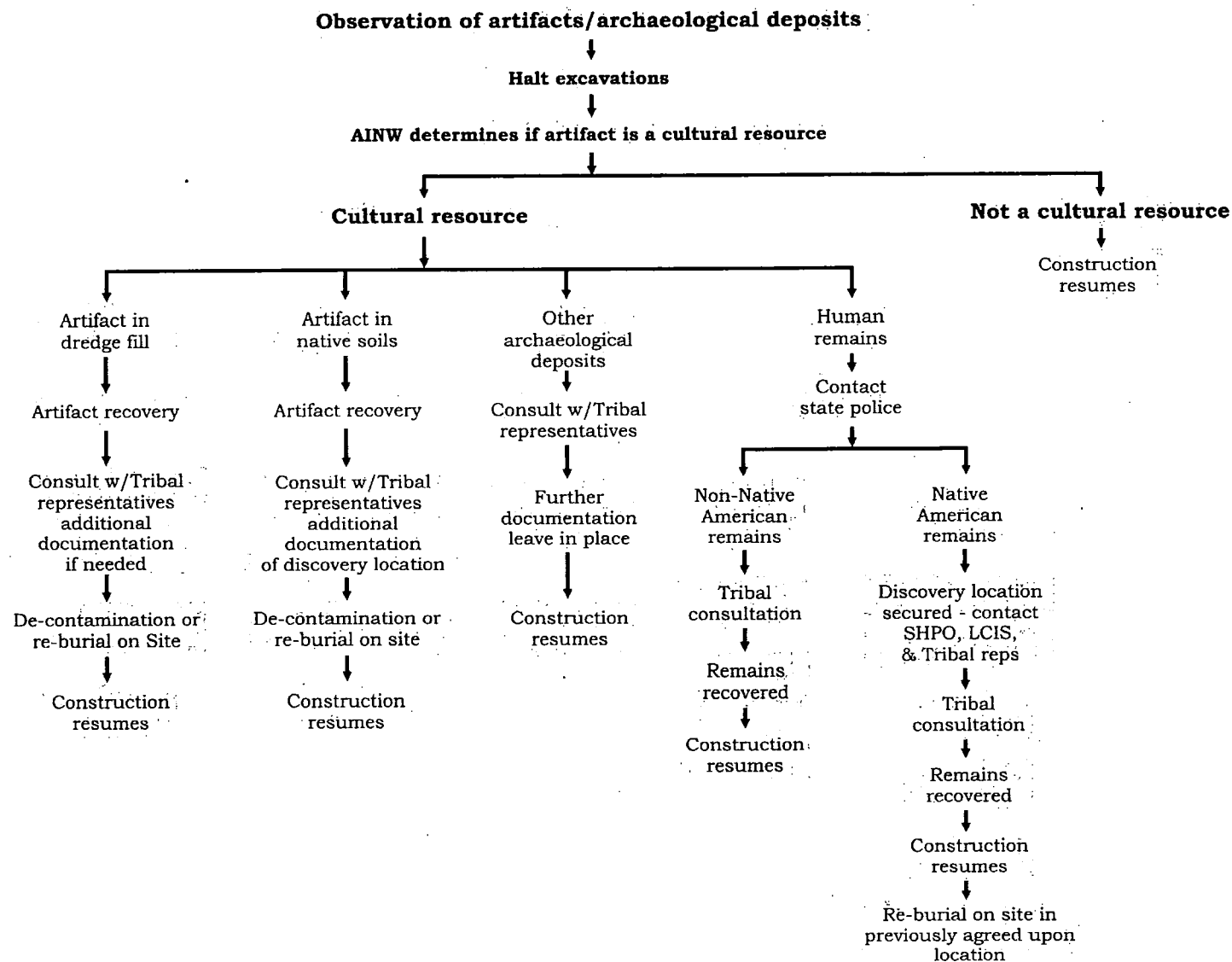


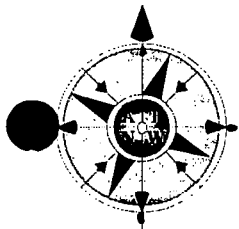
Figure 2
Archaeological Monitoring Protocol Flow Chart
McCormick & Baxter Facility, Portland, Oregon



Attachment A
Contact Information for Archaeological Monitoring Protocol
McCormick & Baxter Facility, Portland, Oregon

Tribe/Agency	Contact Name	Email Address	Phone Number
Oregon DEQ	Kevin Parrett	parrett.kevin@deq.state.or.us	503-229-6748
US EPA	Al Goodman	goodman.alan@epa.gov	503-326-3685
Ecology & Environment	John Montgomery	jmontgomery@ene.com	503-248-5600
AINW	David Ellis	dellis@ainw.com	503-761-6605
SHPO	Dennis Griffin	Not applicable	503-378-4168 x 212
Oregon State Police	Steve Lane (NWR Office in Woodburn)	Not applicable	503-682-0208 x 228 (phone) 503-370-1114 (pager) 503-931-7273 (cell)
Commission on Indian Services	Karen Quigley	Not applicable	503-986-1068
Grand Ronde	Steve Kelly	stephen.kelly@grandronde.org	
	Perri McDaniel	perri.mcdaniel@grandronde.org	
Siletz	Tom Downey	tomd@ctsi.nsn.us	
	Robert Kentta	rkentta@ctsi.nsn.us	
	Billy Barquin	wbarquin@lwilder.com	
Warm Springs	Sally Bird	sbird@wsribes.org	541-553-2006
	Brian Cunninghame	cunninghame@gorge.net	541-490-2009
Umatilla	Audie Huber	audiehuber@ctuir.com	
	Jeff Van Pelt	jeffvanpelt@CTUIR.com	
Yakama	Anne Watanabe	awata@futurelnk.net	
	Paul Ward	ward@yakama.com	
	Tom Zeilman	tzeilman@yakama.com	
Nez Perce	Barbara Inyan	barbarai@now2000.com	
	Kevin Cannell	kevinc@nezperce.org	

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Archaeological Investigations Northwest, Inc.

2632 S.E. 162nd Ave. • Portland, Oregon 97236
Phone (503) 761-6605 • Fax (503) 761-6620

Vancouver Phone (360) 696-7473
E-mail: ainw@ainw.com
Web: www.ainw.com

June 30, 2003

Kevin Parrett, Project Manager
Oregon Department of Environmental Quality, Northwest Region
2020 SW Fourth Avenue
Suite 400
Portland, Oregon 97201

Re: Archaeological Monitoring of the Soil-Bentonite Barrier Wall Construction
at the McCormick and Baxter Creosoting Company Location
AINW Report No. 1152

Dear Mr. Parrett:

Per the contract between the Oregon Department of Environmental Quality (DEQ) and Archaeological Investigations Northwest, Inc. (AINW), we have monitored trenching for the soil-bentonite wall construction at the McCormick and Baxter Creosoting Company site located at 6900 North Edgewater Street along the banks of the Willamette River (near river mile 7) in Portland, Oregon (Figure 1). The McCormick and Baxter Creosoting Company operated between 1944 and 1991, treating wood products with creosote, pentachlorophenol, and inorganic preservatives, which have been found in significant concentrations in the soil and groundwater at the site, and also in river sediments adjacent to the site.

In order to contain these contaminants, the selected remedial action is construction of a subsurface barrier wall. The wall encircles the area of contamination, which totals approximately 16 acres. The barrier wall consists of a trench filled with slurry in the form of a soil and bentonite mix, which forms an impermeable layer that prevents contaminants from spreading to other areas of the site and the Willamette River. The soil-bentonite barrier wall is approximately 732 meters (m) (2,400 feet [ft]) long and varies from 12-24 m (40-80 ft) in depth.

The McCormick & Baxter property is located on the Willamette River floodplain. The historical floodplain was covered with 6.1-9.1 m (20-30 ft) of dredged sand and silt from the Willamette River around 1916. Excavation of the barrier wall therefore entailed excavation through the dredged fill into the underlying native soils. The 2001-2002 cultural resource survey of the McCormick & Baxter property concluded that there was a potential for archaeological deposits in the alluvial silt buried beneath the dredged deposits (Ellis and Zehendner 2002). Given the potential for archaeological deposits in the buried floodplain and the planned excavation of portions of the barrier wall into the historical floodplain, AINW recommended archaeological monitoring of the excavation of the portions of the barrier wall construction that would extend across the historical floodplain.

The archaeological monitoring recommendation was implemented by DEQ through an Archaeological Monitoring Protocol that defined the monitoring procedures and steps to be followed if possible archaeological materials or deposits were encountered during barrier-wall construction. The monitoring protocol was prepared and adopted in consultation with the U.S. Environmental Protection Agency and the Confederated Tribes of the Grand Ronde Community

of Oregon, the Nez Perce Tribe, the Confederated Tribes of the Siletz Indians, the Confederated Tribes of the Umatilla Indian Reservation, the Confederated Tribes of the Warm Springs Reservation of Oregon, and the Confederated Tribes and Bands of the Yakama Nation.

Field Investigations and Results

AINW archaeologist R. Todd Baker, M.A., monitored construction excavation for the soil-bentonite wall from April 9 to April 17 and from April 30 to June 3, 2003. The standard workday was 7:00 a.m. to 5:00 p.m., Monday through Thursday. With the exception of May 30, no construction was undertaken on Fridays or on the weekends. The monitoring was conducted within a designated exclusion zone. Mr. Baker had completed the 40-hour Hazardous Waste Operations and Emergency Response course per OSHA 1910.120, and the monitoring was conducted within the framework of AINW's McCormick & Baxter Health and Safety Plan and Respiratory Protection Plan. Mr. Baker also attended all of the daily site safety meetings conducted in the morning prior to commencement of the construction.

Personal protective equipment (PPE) required for entrance into the exclusion zone consisted of modified Level D, changing to Level C when results of air monitoring exceeded 1 part per million (ppm) of contaminants in the air or when the site safety officer required its use. A full-face respirator, with appropriate filters and cartridges, was worn when contaminant levels exceeded the acceptable ppm.

The trench for the soil-bentonite barrier wall was excavated using an extended-reach backhoe and conducted from a working platform that not only provided a working area for the excavator, but also provided a location for the backfill-mixing operation. An earthen berm, consisting of soil removed during platform construction, was placed on the outside of the trench and formed a barrier around the trench. The bentonite was mixed with water in a storage pond and pumped into the trench during excavation, and the soil-bentonite mixture was used for backfilling the trench.

For safety reasons, monitoring was conducted approximately 3 to 9 m (10 to 30 ft) away from the trench, and field glasses were used to examine dirt as it was being dumped from the bucket (Figure 2). If possible artifacts or other archaeological deposits were observed, the archaeological monitor was to request that the excavated material be deposited where it could be safely examined. Mr. Baker completed daily monitoring logs designed specifically for the McCormick & Baxter project that summarized the results of each day's activities.

Excavation of the soil-bentonite wall trench was started on April 9, 2003. Excavation of the trench began at the southeast end of the trench at Station 38+60 (Figure 3). A "lead-in" trench to the main trench was excavated on April 8, 2003, but did not require archaeological monitoring as the trench did not extend through the dredged fill into native soils. Excavation at this end of the trench was conducted from April 9 through April 17, 2003, and went approximately from Station 38+60 to Station 36+00 (see Figure 3). The excavation plan was to dig the deeper ends of the trench first and then dig the shallower portion and connect the two ends together. On April 18, 2003, excavation was switched from the southeast end of the trench to the southwest end of the trench, which required construction of the working platform at the southwest end of the trench. Since monitoring was not required for the platform construction or the "lead-in" trench in that area, monitoring did not resume until April 30, 2003 at Station 18+00. Excavation then continued from Station 18+00 to approximately Station

36+30 (a slight overlap from the previous excavation in order to connect the ends), which completed the trench excavation (see Figure 3).

Sediments observed in the trench excavation consisted of a thick layer of gray-brown dredged sand overlying a brown/gray mottled silt loam or silty clay loam. The loam layer is considered to be the native soil in the project area. From Station 38+60 to Station 34+00 (near the southeast end of the trench) large amounts of woody debris were encountered (Figure 4). This wood debris consisted of fragments of logs, boards, and wood chips, which may be remnants from when the property was used for wood and lumber storage before the McCormick and Baxter facility was constructed. Some of the woody debris may have been used along with the dredged material to facilitate filling of the property in 1916.

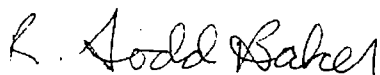
No prehistoric or historic-period cultural material was discovered during monitoring of the soil-bentonite barrier wall trench. At no time during the excavations did Mr. Baker observe any evidence of artifacts or other possible archaeological deposits, and at no time therefore did he request that excavated sediments be deposited where he could examine them.

Summary and Recommendations

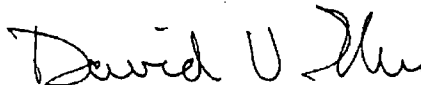
AINW monitored construction excavations of the soil-bentonite wall trench at the McCormick and Baxter Creosoting Company site from April 9 to April 17 and from April 30 to June 3, 2003. No prehistoric or historic-period cultural material was discovered during monitoring of the slurry wall trench. Based on the results of the field investigations, it is AINW's professional opinion that construction of the soil-bentonite barrier wall did not affect any significant archaeological resources. AINW therefore recommends no additional studies at this time.

We appreciate the opportunity to participate in the monitoring project. Please contact our office if you have any questions about the results of the monitoring work or this report.

Sincerely,



R. Todd Baker, M.A.
Supervising Archaeologist



David V. Ellis, M.P.A.
Senior Archaeologist

Kevin Parrett/DEQ
McCormick & Baxter Archaeological Monitoring
June 30, 2003

Attachment

Reference

Ellis, David V., and Maureen M. Zehendner
2002 *A Cultural Resources Survey of the McCormick & Baxter Superfund (CERCLA) Property, Portland, Oregon.* Archaeological Investigations Northwest, Inc. Report No. 236.
Prepared for Oregon Department of Environmental Quality, Portland.

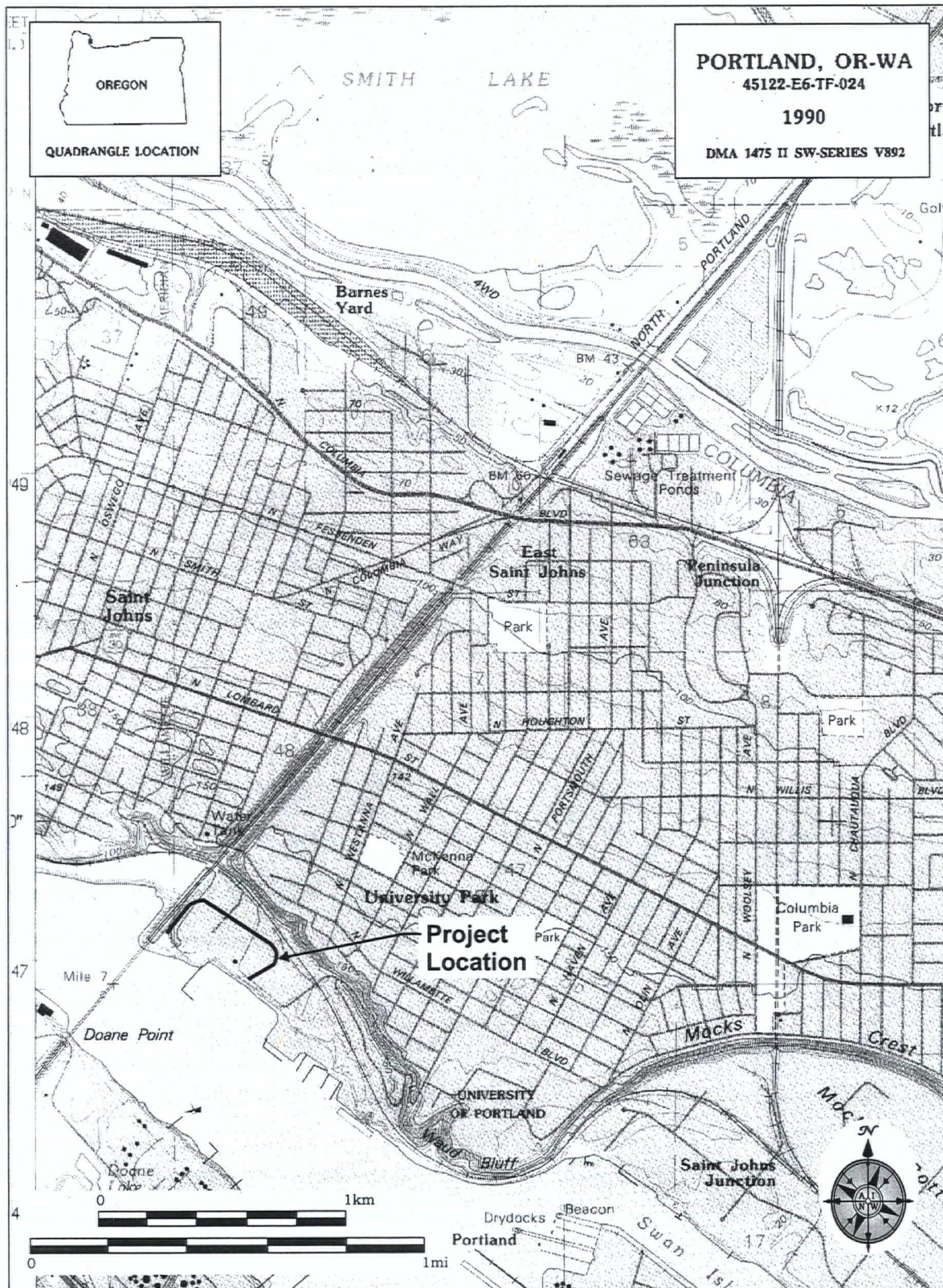


Figure 1. Project location showing barrier wall alignment.



Figure 2. View to the northwest of the southwestern end of the slurry wall trench in progress.



Figure 4. View to the east of the northeast portion of the slurry trench in progress. Woody debris can be seen in the trench in the foreground.

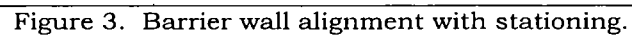


Figure 3. Barrier wall alignment with stationing.

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Community Fact Sheets



State of Oregon
Department of
Environmental
Quality

Environmental
Cleanup Division

2020 SW Fourth Ave.
Suite 400
Portland, OR 97201
Phone: (503) 229-5263
Fax: (503) 229-6945
Toll Free: (800) 452-4011

Contact: Kevin Parrett
(503) 229-6748

www.deq.state.or.us

McCormick & Baxter

Project Overview

The McCormick & Baxter site is located on the northeast shore of the Willamette River in north Portland. The legal address is 6900 North Edgewater Ave., Portland, Oregon 97203, and DEQ's Environmental Cleanup Site Information (ECSI) number for this site is 74. The site includes about 43 acres of land and about 15 acres of sediments beneath the Willamette River.

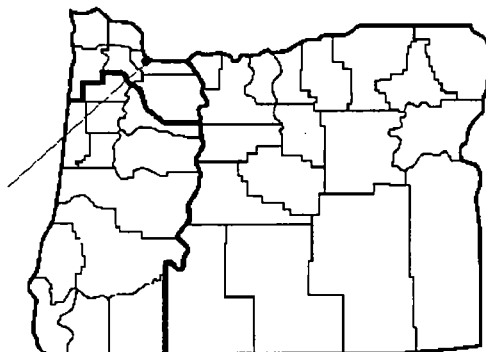
McCormick & Baxter Creosoting Company operated between 1944 and 1991, treating wood products with creosote, pentachloro-phenol, and inorganic (arsenic, copper, chromium, and zinc) preservative solutions. Historically, process wastewaters were discharged directly to the Willamette River, and other process wastes were dumped in several areas of the site. Significant concentrations of wood-treating chemicals have been found in soil and groundwater at the site, and in river sediments adjacent to the site.

DEQ conducted investigations at the site between September 1990 and September 1992, and issued a proposed cleanup plan in January 1993. However, a final Record of Decision (ROD) was postponed when the United States Environmental Protection Agency (EPA) proposed to list the site on the National Priorities List (NPL). EPA listed the site in June 1994. In the interim, DEQ implemented a number of removal measures, including plant demolition, sludge and soil removals, and extraction of creosote from the groundwater aquifers.

DEQ issued a revised Feasibility Study report in September 1995, and DEQ and EPA issued a proposed cleanup plan in October 1995. The ROD was signed in April 1996 after considering public comments.

DEQ is the lead agency for implementing the selected remedy while funding for remedial design and construction is being provided by EPA. A component of the groundwater remedy, initiated in 1994, consisted of an automated creosote extraction and groundwater treatment system. However, due to poor product recovery and high operating costs, the automated system was discontinued in late 2000. Creosote is currently being recovered by passive and manual methods. Approximately 2,000 gallons have been recovered since 1996.

Implementation of the soil remedy began in March 1999 with the removal of 33,000 tons of



highly contaminated soil and debris. The soil remedy will be completed by capping the entire site with several feet of clean soil, anticipated to occur in 2004 or 2005, once the groundwater and sediment remedies have been fully implemented.

As a component of the groundwater remedy, an impermeable subsurface barrier wall will be installed around 16 acres of the site. The subsurface barrier wall will contain the primary source areas of groundwater contamination and should eliminate ongoing seepage of creosote into the Willamette River. Construction of the barrier wall is planned to begin in April 2003 and will last for three to four months.

The ROD requires a protective cap to be placed over areas of contaminated river sediments posing an unacceptable risk to human health and the environment. DEQ anticipates the sediment cap design will be completed by summer 2003 and construction will occur in 2004.

Environmental Concerns

The primary risks associated with the site are from exposure to wood-treating compounds in soil, river sediments and surface water near the site. These compounds are also entering the food chain, and the Oregon Department of Human Services, Office of Public Health, maintains a health advisory for crayfish harvesting within 1,000 feet of the site (see Oregon Sport Fishing Regulations).

Fences control access to the site and warning signs have been posted around the site perimeter and beach area. A floating containment boom is maintained around a persistent creosote seep in the Willamette River. These measures are temporary and full protection of human health and the environment only will be achieved when the cleanup actions specified in the ROD have been fully implemented.

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News Release



State of Oregon
Department of
Environmental
Quality

**Communications
& Outreach**
811 SW 6th Ave.
Portland, OR 97204
Phone: (503) 229-5696
Toll free in OR
(800) 452-4011
Fax: (503) 229-5850

For release: March 7, 2003

Contacts:

Fenix Grange, Project Coordinator, Portland, (503) 229-6590

Marcia Danab, Communications & Outreach, Portland, (503) 229-6488

DEQ to Hold March 20th Informational Open House on McCormick & Baxter Superfund Cleanup

Meeting will be held 7 to 8:30 p.m. at the University of Portland

What: Oregon Department of Environmental Quality (DEQ) staff members will hold a meeting and open house about the continuing cleanup of the McCormick & Baxter Creosoting Co. site, which is located in north Portland along the Willamette River.

When: 7 to 8:30 p.m., Thursday, March 20

Where: University of Portland
Buckley Center Auditorium
5000 North Willamette Boulevard, Portland

Background: Attendees will be able to participate in the design process that lays the groundwork for future public use of the McCormick & Baxter site in north Portland. The Portland Harbor Citizen's Advisory Committee (PHCAG) will be on hand to invite public participation throughout the broader Portland Harbor Superfund cleanup process.

For more

information: Fenix Grange, DEQ Project Coordinator, Portland
(503) 229-6590
grange.fenix@deq.state.or.us

Visit DEQ's Web site to find detailed information about McCormick & Baxter as well as key documents pertaining to the cleanup:
www.deq.state.or.us/nwr/mccormick.htm.

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March 20th Open House: McCormick & Baxter Superfund Cleanup

The Department of Environmental Quality (DEQ) will hold a meeting and open house about the continuing cleanup at the McCormick & Baxter Superfund site. The site, located along the Willamette River in north Portland, located within the larger Portland Harbor Superfund site. DEQ will provide information about construction impacts, cleanup steps, and how you can participate in the design process that lays the groundwork for future public use of the site. The Portland Harbor Citizens Advisory Committee will be on hand to invite public participation throughout the broader Portland Harbor Superfund cleanup process.

Meeting date: Thursday, March 20, 2003

Meeting Time: 7 p.m. to 8:30 p.m.

Meeting Location:

University of Portland
Buckley Center Auditorium
5000 North Willamette Boulevard

To get to the Buckley Center Auditorium, go to the main campus entrance on North Willamette and follow the entrance drive until it curves to the left. Buckley Center will be visible on your right. Parking is available in the main parking lot, off the entrance drive to the right.

Tri-Met bus service to University of Portland includes the #1 -- Greeley and the #40 -- Mock's Crest. The University of Portland bus stop is located right next to the main entrance.

Background

In 1994 the Environmental Protection Agency (EPA) placed the McCormick & Baxter Creosoting Company site, on the National Priorities List. Located just south of Willamette Cove, near the University of Portland, McCormick & Baxter is within the larger Portland Harbor Superfund Site, listed in 2000. Through an agreement with EPA, DEQ is the Lead Agency for cleanup at McCormick & Baxter.

The 1996 DEQ & EPA Record of Decision (ROD) stated that a subsurface barrier wall could be built if the initial cleanup actions were not effective. More than 33,000 tons of contaminated soil and debris and 1,950 gallons of creosote-contaminated groundwater have been removed from the McCormick & Baxter site

since 1996, but creosote continues to contaminate the Willamette River.

DEQ and EPA have concluded that a barrier wall is now necessary to prevent further creosote contamination of the Willamette River and its sediments. EPA awarded DEQ \$4 million in July 2002 to build the barrier wall.

Barrier wall construction begins in April

The underground barrier wall will encircle 16 acres containing the significant sources of groundwater contamination. The barrier wall will extend to a maximum depth of 80 feet below ground surface. Along the riverfront, the barrier wall will be constructed of interlocking steel sheet pile. Inland, the barrier will be constructed using a trench filled with an impermeable clay mixture. The barrier wall will not be visible above ground surface.

What your neighborhood may notice during construction

Construction of the barrier wall is scheduled to begin Wednesday, April 2, and should be completed by mid-summer. Construction will take place Monday through Thursday between 7 a.m. and 5:30 p.m. Pre-construction setup activities on site will begin Monday, March 24th.

During the first two weeks in April, neighbors can expect about 15 large trucks per day, traveling to and from the site via North Edgewater. The trucks will bring in loads of material and equipment. The trucks will travel to and from Interstate 5, along North Columbia Boulevard and North Portsmouth Avenue.

Contractors will install 1,400 linear feet of interlocking sheetpile along the riverbank of McCormick & Baxter. Similar to installing individual pilings, this involves driving the 80-foot sheet piles into the ground. To lessen impacts to the nearby residential community, noise-generating activities will not begin before 7:30 a.m. The contractors will use a vibratory method to install the sheet piles. Noise levels at the riverbank are expected to be 90 to 95 decibels. Noise levels at the nearest residences, some 1,000 feet away, are expected to be fewer than 60 decibels, the volume of a person talking. If you have construction concerns, call Kevin Parrett, DEQ Project Manager, at 503-229-6748.



State of Oregon
Department of
Environmental
Quality

Northwest Region Cleanup/Portland Harbor

2020 SW 4th Avenue,
Suite 400
Portland, OR 97204
Phone: (800) 452-4011
Fax: (503) 229-6899

www.deq.state.or.us/nwr/mccormick.htm

Contacts:

Kevin Parrett
Project Manager
Phone: (503) 229-6748

Fenix Grange
Public Involvement
Coordinator
Phone: (503) 229-6590

Accessibility information

DEQ is committed to accommodating people with disabilities at our meetings. Please notify DEQ of any special physical or language accommodations or if you need information in large print, Braille or another format. To make these arrangements, contact DEQ Northwest Region Office of Communications & Outreach at (503) 229-6488 or toll free in Oregon at (800) 452-4011.

People with hearing impairments may call DEQ's TTY number, (503-229-5471).

Last Updated: 3/10/03
By: Fenix Grange

Protecting human health and the ecosystem

Wood-treating compounds at McCormick & Baxter pose dangers to human health through contact with soil, river sediments and surface water near the site. These compounds are also entering the food chain. The Oregon Department of Human Services, Office of Public Health, maintains a health advisory for crayfish harvesting within 1,000 feet of the site (see Oregon Sport Fishing Regulations).

Until cleanup is completed, existing fences control access to the site and warning signs have been posted around the site perimeter and beach area. In the river, the active creosote seep is controlled with a floating containment boom.

Completion of the barrier wall is expected to eliminate creosote contamination of the river, significantly reducing exposures for humans and wildlife. Two other planned cleanup actions at McCormick & Baxter are required to fully protect human and environmental health. Because surface soils have widespread contamination, DEQ requires installation of a two-foot thick soil cap across the entire upland site. Similarly, the Record of Decision calls for the installation of a permanent, protective sediment cap on the river bottom to seal off river sediments that are contaminated. When the cleanup is complete, any remaining hazardous substances at the site will be effectively isolated, protecting humans and wildlife from risks due to contact with contaminants.

Sediment cap design is next step

DEQ is working on the final design for the permanent sediment cap. Installation of the sediment cap will begin the summer of 2004, pending funding from EPA. Design work will begin soon for the protective soil cap that will cover the surface of the site, and make it safe for people and wildlife. Installation of the soil cap is anticipated in 2005.

Future use of the property

Once the site is safe for reuse, McCormick and Baxter presents a unique opportunity to reclaim almost 50 acres of urban waterfront. While the future property owner will ultimately decide the use of the property, there is substantial interest in creating a park. Through an EPA grant, the City of Portland convened the McCormick & Baxter Site Reuse Advisory Committee in 2000 to develop reuse recommendations. The committee report recommended that McCormick & Baxter be developed by the City of Portland as a permanent park. The next steps in this process would be to determine if the property can be acquired and developed as a public park.

Soil cap design impacts future use

Decisions made now about the soil cap design will affect the possible future uses of the property. For example, one soil cap design might provide for level, compacted surfaces for sports fields and parking lots, where another design would provide surface variation with elevation changes to create small hills and perhaps wetlands, to support natural open space.

Opportunities to get involved

The public is invited to participate in the decision-making process for the soil cap design. If you would like to participate, please contact Fenix Grange or your neighborhood association chairperson.

Citizen involvement is also very important in the broader cleanup of Portland Harbor. The Portland Harbor Citizens Advisory Group is an active and committed group of private citizens who work to ensure that community concerns are considered in each stage of the cleanup process. Recently, the group provided important public comment on the draft work plan for the Portland Harbor in-water investigation. The Citizens Advisory Group meets on the second Wednesday of every month at NE 800 Oregon Street in Portland from 6 p.m. to 8 p.m. To learn more, contact Joe Keating at keats@teleport.com or Willamette Riverkeeper at 503-223-6418.

Where can I get more information on the McCormick & Baxter Superfund Site?

Contact:

Kevin Parrett, DEQ Project Manager
503-229-6748
parrett.kevin@deq.state.or.us

Fenix Grange, DEQ Public Involvement
Coordinator
503-229-6590
grange.fenix@deq.state.or.us

Alan Goodman, EPA Project Manager
503-325-3685
goodman.alan@epa.gov

Visit DEQ's website to find detailed information about McCormick & Baxter as well as key documents pertaining to the cleanup:
<http://www.deq.state.or.us/nwr/mccormick.htm>.

Hard copies of pertinent documents concerning the McCormick & Baxter Creosoting Company site are available for public review.

For file review appointments call: 503-229-6729 or 1-800-452-4011 (toll-free in Oregon).



G

Daily Field Reports



ecology and environment, inc.

DAILY FIELD REPORT NO.: 1

Date: 3/31/2003 **Day:** Monday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: _____	Morning: <u>58 °F</u>	Clean: _____
Part Cldy: <u>PM</u>	Midday: <u>62 °F</u>	Dusty: _____
Overcast: _____	Afternoon: <u>65 °F</u>	Muddy: <u>Slightly</u>
Rain: <u>AM</u>		Other: _____
Fog: _____		
Snow: _____		
Other: _____		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	8	Preparing for wall construction
2	Geo-Solutions, Inc.	1	Preparing for wall construction
3	David Evans and Assoc	2	Staking wall alignment
4	APS	1	Utility locator
5			

VISITORS

Time In	Time Out	Name	Representing	Remarks

MAJOR EQUIPMENT ON SITE

Manitowac 4000W Vicon Crane
Gorman Rupp 55 Hp Slurry Pump
CAT 950 Loader
Komatsu PC 1100LC Excavator w/ 80 ft Boom
2000 Gallon Water Truck
Grove AMZ86XT Manlift
John Deere 550H Tracked Dozer
CAT 322B Tracked Excavator
LULL 10K-54 Forklift
Venturi Slurry Mixer

MATERIALS DELIVERED TO SITE

16 - 3,000 lb bags of Naturalgel bentonite.
Approx. 6 pallettes of compost socks.
1,800 feet of silt fencing
7 Steel Plates



ecology and environment, inc.

DAILY FIELD REPORT NO.: 1

Date: 3/31/2003 Day: Monday

Project Title: McCormick & Baxter Barrier Wall Construction

Client: ODEQ

E & E Project No.: 001688.OY02.25.01

NONCONFORMANCES NOTED

WHO WAS NOTIFIED?

none

SAFETY CONCERNS NOTED

WHO WAS NOTIFIED?

none

RIVER CONDITIONS NOTED

Morrison Bridge Gage: 9.43 ft. NGVD Recorded at 07:30

River Stage at Site: 9.33 ft. NGVD

NAPL Sheen Observations: None

Construction Induced Runoff Observations: None

Daily Photo Documentation: None

Other:

WORK COMPLETED

1. Removed fencing along top of bluff near STA 1+00 to allow for start of construction. Temporary fencing installed at day's end.
2. Potholed near STA 1+00 with excavator to locate buried water line. Silt fencing and compost socks installed near excavation.
3. Trailer, construction equipment, and materials mobilized to site (see materials delivered, above). Electrical service connected to trailer.
4. Survey crew began staking wall alignment along south side. Staked centerline and 40' and 60' offsets.

NOTES/ISSUES

1. Long reach excavator and Vicon crane were delivered and assembled last week.
2. Mark Henry out due to personal reasons. Keith Carpenter to fill in in his absence.
3. Phone service scheduled to be installed to trailers on 4/2/03.

Prepared By: Mike Coenen

Title: Oversight Engineer

Signature:



ecology and environment, inc.

DAILY FIELD REPORT NO.: 2

Date: 4/1/2003 Day: Tuesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: _____	Morning: 48 °F	Clean: _____
Part Cldy: _____	Midday: 55 °F	Dusty: _____
Overcast: _____	Afternoon: 57 °F	Muddy: X
Rain: X		Other: _____
Fog: _____		
Snow: _____		
Other: _____		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	10	Troy Feathers - superintendent
2	Geo-Solutions, Inc.	1	Bruce George - slurry trench specialist
3	David Evans and Assoc	2	Staking wall alignment

VISITORS

Time In	Time Out	Name	Representing	Remarks

MAJOR EQUIPMENT ON SITE

Manitowac 4000W Vicon Crane
Manitowac 3900W Vicon Crane
Gorman Rupp 55 Hp Slurry Pump
CAT 950 Loader
Komatsu PC 1100LC Excavator w/ 80 ft Boom
Komatsu PC 220LC Excavator
2000 Gallon Water Truck
Grove AMZ86XT Manlift
John Deere 550H Tracked Dozer
CAT 322B Tracked Excavator
LULL 10K-54 Forklift
Venturi Slurry Mixer

MATERIALS DELIVERED TO SITE

4 loads (truck and trailer) of Wilken's clay
6" HDPE pipe (for slurry line)



Ecology and environment, inc.

DAILY FIELD REPORT NO.: 2

Date: 4/1/2003 **Day:** Tuesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

NONCONFORMANCES NOTED	WHO WAS NOTIFIED?
None	

SAFETY CONCERNS NOTED	WHO WAS NOTIFIED?
None	

RIVER CONDITIONS NOTED		
Morrison Bridge Gage:	8.05 ft. NGVD	Recorded at 10:30
River Stage at Site:	7.95 ft. NGVD	
NAPL Sheen Observations:	None	
Construction Induced Runoff Observations:	None	
Daily Photo Documentation:	Silt fence installation & shoreline debris removal	
Other:		

WORK COMPLETED
1. Began construction of slurry pond. Pond dimensions: 40' x 60' x 6' deep.
2. Second crane (Vicon 3900) delivered to site and partially assembled.
3. Began construction of working platform from approx. STA 1+00 (=STA 38+67.92) to approx. STA 36+00. Used dozer to push existing soils to construct perimeter berms.
4. Silt fencing and compost bags installed down river bank at approx. 60' south of STA 1+00, then installed along toe of bank (following shoreline) to approx. STA 1+70.
5. Cut 8" water line approx. 80' south of utility crossing at STA 38+47. Installed 8" ductile iron mechanical joint adapter flange and blind flange cap.
6. Survey crew continued staking wall alignment (centerline and 40' and 60' offsets).
7. Containment boom installed by West Coast Marine Cleaning in Willamette River from approx. 100' south of STA 1+00 to approx. STA 4+00. Boom anchored 100' from shoreline.

NOTES/ISSUES
None



ecology and environment, inc.

DAILY FIELD REPORT NO.: 2

Date: 4/1/2003 **Day:** Tuesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Prepared By: Chad Nancarrow

Title: Project Engineer

Signature:

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ecology and environment, inc.

DAILY FIELD REPORT NO.: 3

Date: 4/2/2003 Day: Wednesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: _____	Morning: <u>39 °F</u>	Clean: _____
Part Cldy: _____	Midday: <u>45 °F</u>	Dusty: _____
Overcast: _____	Afternoon: <u>47 °F</u>	Muddy: <u>X</u>
Rain: <u>pm</u>		Other: _____
Fog: _____		
Snow: _____		
Other: <u>am showers</u>		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	13	Mark Henry (Project Manager) on site
2	Geo-Solutions, Inc.	1	
3	Wayne Culver	1	Mechanic

VISITORS

Time In	Time Out	Name	Representing	Remarks
9:30	12:20	Dale Blackburn	QWEST	Installing phone lines
12:50	14:20	Nathan Chun	National Fire Fighters	Recharged site fire extinguishers
13:00	15:50	Kevin Parrett	ODEQ	Attended weekly progress meeting
13:00	15:50	Steve Campbell	ODEQ	Attended weekly progress meeting
13:00	15:50	John Montgomery	E & E	Attended weekly progress meeting
13:00	15:50	Susan Gardner	E & E	Sediment cap site visit

MAJOR EQUIPMENT ON SITE

Manitowac 4000W Vicon Crane
Manitowac 3900W Vicon Crane
Gorman Rupp 55 Hp Slurry Pump
CAT 950 Loader
Komatsu PC 1100LC Excavator w/ 80 ft Boom
Komatsu PC 220LC Excavator
2000 Gallon Water Truck
Grove AMZ86XT Manlift
John Deere 550H Tracked Dozer
CAT 322B Tracked Excavator

MATERIALS DELIVERED TO SITE

3 loads (51 bags) of Naturalgel Bentonite (2000 lbs/bag)
I-beams for sheet pile template



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DAILY FIELD REPORT NO.: 3

Date: 4/2/2003 Day: Wednesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

LULL 10K-54 Forklift	
Venturi Slurry Mixer	

NONCONFORMANCES NOTED	WHO WAS NOTIFIED?
None	

SAFETY CONCERNS NOTED	WHO WAS NOTIFIED?
None	

RIVER CONDITIONS NOTED		
Morrison Bridge Gage:	8.51 ft. NGVD	Recorded at 10:30
River Stage at Site:	8.41 ft. NGVD	
NAPL Sheen Observations:	None	
Construction Induced Runoff Observations:	None	
Daily Photo Documentation:	None	
Other:		

WORK COMPLETED
1. Completed assembly of Vicon 3900 crane.
2. Continued construction of working platform. Partially completed to STA 32+50. Approx. 200' of platform excavated to approx. 6'-8' bgs (to allow for deep wall excavation to -40.00 ft NVGD with 1100LC excavator). Approx. 80' of lead-in trench (north of wall alignment; parallel to river) also excavated to approx. 6'-8' bgs.
3. Began welding HDPE piping sections (by heat fusion) for slurry transfer line.
4. E & E installed a 6' graduated staff gauge on an piling located offshore from the southern corner of the site (for monitoring Willamette River stage).

NOTES/ISSUES
1. Kickoff Health and Safety Meeting was held in Remtech Trailer at 09:00. All site workers present (required). Meeting conducted by Mark Henry.
2. Weekly progress meeting held at 13:00. Group performed site walk, then held meeting in Remtech trailer.



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DAILY FIELD REPORT NO.: 3

Date: 4/2/2003 **Day:** Wednesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Prepared By: Chad Nancarrow

Title: Project Engineer

Signature:

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DAILY FIELD REPORT NO.: 4

Date: 4/3/2003 Day: Thursday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: _____	Morning: 39 °F	Clean: _____
Part Cldy: _____	Midday: 44 °F	Dusty: _____
Overcast: _____	Afternoon: 49 °F	Muddy: X
Rain: X		Other: _____
Fog: _____		
Snow: _____		
Other: _____		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	13	
2	Geo-Solutions, Inc.	1	
3	Wayne Culver	1	

VISITORS

Time In	Time Out	Name	Representing	Remarks

MAJOR EQUIPMENT ON SITE

MATERIALS DELIVERED TO SITE

Manitowac 4000W Vicon Crane	1 load of ballast rock
Manitowac 3900W Vicon Crane	3 loads of 2"-4" quarry spalls
Gorman Rupp 55 Hp Slurry Pump	2 loads of Wilken's clay
CAT 950 Loader	2 loads (34 bags) of Naturalgel Bentonite (2000 lbs/bag)
Komatsu PC 1100LC Excavator w/ 80 ft Boom	
Komatsu PC 220LC Excavator	
2000 Gallon Water Truck	
Grove AMZ86XT Manlift	
John Deere 550H Tracked Dozer	
CAT 322B Tracked Excavator	
LULL 10K-54 Forklift	
Venturi Slurry Mixer	
I.C.E. Power Unit, Model 570	
I.C.E. Vibratory Driver, Model 4450	



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DAILY FIELD REPORT NO.: 4

Date: 4/3/2003 **Day:** Thursday

Project Title: McCormick & Baxter Barrier Wall Construction

Client: ODEQ

E & E Project No.: 001688.OY02.25.01

NONCONFORMANCES NOTED

WHO WAS NOTIFIED?

None

SAFETY CONCERNS NOTED

WHO WAS NOTIFIED?

None

RIVER CONDITIONS NOTED

Morrison Bridge Gage: 8.47 ft. NGVD Recorded at 13:30

River Stage at Site: 8.37 ft. NGVD

NAPL Sheen Observations: None

Construction Induced Runoff Observations: None

Daily Photo Documentation: None

Other:

WORK COMPLETED

1. Crew continued construction of working platform. Working platform area has been cleared/grubbed and perimeter berms partially established to approx. STA 31+00. Crew continued excavation of lead-in platform trench and main platform trench to approx. STA 37+00. Trench excavated approx. 20' wide by 6' deep.
2. Vibratory driver and power unit (for sheet pile installation) were mobilized to the site (see equipment list, above).
3. Crew continued welding HDPE piping sections for slurry transfer line (currently installed from the slurry pond to approximately STA 38+00).
4. Crew placed and graded 3 loads of 2"-4" quarry spalls on site gravel road near entrance to vehicle decon pad. One load of ballast rock also delivered to be used to upgrade gravel road to shop building.
5. Crew initiated slurry mixing via venturi pumping. 6 bags of Naturalgel were used.

NOTES/ISSUES

1. Buried wood debris was encountered at approx. 6' bgs near STA 37+00 during working platform excavation. Debris to be segregated and separately stockpiled (not to be used in the S-B mix).
2. E & E submitted inclinometer installation specifications to Remtech to obtain a cost estimate from their subcontractor, Tacoma Pump and Drilling.
3. Remtech submitted draft Invoice No.1 to E & E for review.



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DAILY FIELD REPORT NO.: 4

Date: 4/3/2003 **Day:** Thursday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

4. As an action item from the weekly progress meeting, E&E was tasked with locating the water meter for the site and observing the rate of use. Indications that a possible leak downstream of the backflow preventer were observed on 4/1/03 (i.e. no water pressure soon after shutoff at the backflow prevention device). After location of the water meter, E&E recorded a meter reading 9,227,690 ft³ at 10:00. The previous official reading was 9,202,000 ft³ on 3/18/03 which indicates an approximate use of 25,690 ft³ (192,162 gallons). This usage indicates a considerable increase over previous months with little site activity. E&E took another meter reading during lunch (no construction activities) and found that the water meter indicated an approximate use of 70 gallons per minute. Further assessment will be performed by reading the meter after operations are completed today with water supply shutoff at backflow preventer and then again tomorrow. Thus eliminating possible influence to the total use by leakage upstream of the backflow device. Contingencies are being examined such as connecting the necessary site water supply directly into the backflow device. Remtech was informed and is looking for necessary fittings to eliminate possible schedule delays. Also, Remtech has expressed concerns about system integrity which will be presented at the next progress meeting.

Prepared By: Chad Nancarrow/Andrew Murphy

Title: Engineers

Signature:

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DAILY FIELD REPORT NO.: 5

Date: 4/7/2003 Day: Monday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: _____	Morning: 45 °F	Clean: _____
Part Cldy: _____	Midday: 51 °F	Dusty: _____
Overcast: _____	Afternoon: 57 °F	Muddy: X
Rain: X		Other: _____
Fog: _____		
Snow: _____		
Other: _____		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	12	
2	Geo-Solutions, Inc.	1	

VISITORS

Time In	Time Out	Name	Representing	Remarks
14:15	14:25		Shultz Clearwater Sanitation	Pumped wastewater holding tank near decon trailer

MAJOR EQUIPMENT ON SITE

MATERIALS DELIVERED TO SITE

Manitowac 4000W Vicon Crane	8 loads of sheet pile (18 pairs of 60'; 10 pairs of 68'; 15 pairs of 70')
Manitowac 3900W Vicon Crane	1 load of ballast rock
Gorman Rupp 55 Hp Slurry Pump	2 loads of Wilken's clay
CAT 950 Loader	3 loads (51 bags) of Naturalgel Bentonite (2000 lbs/bag)
Komatsu PC 1100LC Excavator w/ 80 ft Boom	
Komatsu PC 220LC Excavator	
2000 Gallon Water Truck	
Grove AMZ86XT Manlift	
John Deere 550H Tracked Dozer	
CAT 322B Tracked Excavator	
LULL 10K-54 Forklift	
Venturi Slurry Mixer	
I.C.E. Power Unit, Model 570	
I.C.E. Vibratory Driver, Model 4450	



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DAILY FIELD REPORT NO.: 5

Date: 4/7/2003 Day: Monday

Project Title: McCormick & Baxter Barrier Wall Construction

Client: ODEQ

E & E Project No.: 001688.OY02.25.01

CAT 426B (turbo) Backhoe

NONCONFORMANCES NOTED

WHO WAS NOTIFIED?

None

SAFETY CONCERNS NOTED

WHO WAS NOTIFIED?

None

RIVER CONDITIONS NOTED

Morrison Bridge Gage: 8.00 ft. NGVD Recorded at 08:00

River Stage at Site: 7.90 ft. NGVD

NAPL Sheen Observations: None

Construction Induced Runoff Observations: None

Daily Photo Documentation: Moving woody debris along shoreline

Other:

WORK COMPLETED

1. Crew continued construction of working platform. Working platform excavation trench completed to approx. STA 35+00. No further work was performed on the lead-in trench.
2. Crew proceeded with preconstruction activities for the sheet pile wall by pushing woody debris shoreward to make room for silt fencing. Debris was cleared to approx. STA 5+00. Silt fencing was installed to approx. STA 4+50.
3. Crew continued welding HDPE piping sections for slurry transfer line.
4. Crew placed and graded 1 load of ballast rock to upgrade site access roads (along truck route to minimize tracking mud).
5. Crew continued mixing bentonite slurry via venturi pumping. 12.5 bags of Naturalgel were used. Slurry pond is approximately half full.

NOTES/ISSUES

1. Crew continued to encounter buried woody debris while excavating working platform trench from approx. STA 37+00 to approx. STA 35+50. In an attempt to determine the vertical extent of the debris, the crew potholed to approx. 10' bgs near STA 37+00 and to approx. 15' bgs near STA 36+45; however, the debris persisted at these depths. Remtech and Geosolutions voiced concern regarding installation and performance of the wall at this location. E & E will investigate this matter further.



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DAILY FIELD REPORT NO.: 5

Date: 4/7/2003 **Day:** Monday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

2. E & E continued assessment of potential water main leakage. Three meter readings were recorded at 0630, 0725, and 1245. The calculated water leakage over the three day weekend (with the backflow valve turned off) was approximately 0.13 gal/min or approximately 658 gallons. Between 0630 and 0725 (after the valve was turned on and prior to construction activities), a leakage of 2.2 gal/min was calculated, vs. approx. 70 gal/min calculated on 04/03/03. The reason for this discrepancy is uncertain. At 1245 the meter operation was observed during construction activities utilizing water (slurry mixing). After water utilization was stopped, the meter significantly slowed indicating minimal water leakage. E & E will continue to monitor this situation.

Prepared By: Chad Nancarrow/Andrew Murphy

Title: Engineers

Signature:

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DAILY FIELD REPORT NO.: 6

Date: 4/8/2003 Day: Tuesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: _____	Morning: <u>53 °F</u>	Clean: _____
Part Cldy: <u>X</u>	Midday: <u>60 °F</u>	Dusty: _____
Overcast: _____	Afternoon: <u>67 °F</u>	Muddy: <u>X</u>
Rain: _____		Other: _____
Fog: _____		
Snow: _____		
Other: _____		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	12	
2	Geo-Solutions, Inc.	2	Chris Ryan on site
3	David Evans & Associates	2	Survey crew

VISITORS

Time In	Time Out	Name	Representing	Remarks
11:30	13:15	Kevin Parrett	ODEQ	Attended Site Safety Briefing
11:30	13:15	Fenix Grange	ODEQ	Attended Site Safety Briefing
11:30	13:15	Todd Baker	AINW	Attended Site Safety Briefing
11:30	13:15	Susan White	AINW	Attended Site Safety Briefing

MAJOR EQUIPMENT ON SITE	MATERIALS DELIVERED TO SITE
Manitowac 4000W Vicon Crane	6 loads of sheet pile (12 pairs of 60'; 5 pairs of 68'; 4 pairs of 70'; and 12 pairs of 72')
Manitowac 3900W Vicon Crane	
Gorman Rupp 55 Hp Slurry Pump	1 load of straw bales
CAT 950 Loader	3 loads (51 bags) of Naturalgel Bentonite (2000 lbs/bag)
Komatsu PC 1100LC Excavator w/ 80 ft Boom	
Komatsu PC 220LC Excavator	
2000 Gallon Water Truck	
Grove AMZ86XT Manlift	
John Deere 550H Tracked Dozer	
CAT 322B Tracked Excavator	
LULL 10K-54 Forklift	
Venturi Slurry Mixer	
I.C.E. Power Unit, Model 570	



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DAILY FIELD REPORT NO.: 6

Date: 4/8/2003 **Day:** Tuesday

Project Title: McCormick & Baxter Barrier Wall Construction

Client: ODEQ

E & E Project No.: 001688.OY02.25.01

I.C.E. Vibratory Driver, Model 4450

CAT 426B (turbo) Backhoe

NONCONFORMANCES NOTED

None

WHO WAS NOTIFIED?

SAFETY CONCERNS NOTED

None

WHO WAS NOTIFIED?

RIVER CONDITIONS NOTED

Morrison Bridge Gage: 8.30 ft. NGVD

Recorded at 09:00

River Stage at Site: 8.20 ft. NGVD

NAPL Sheen Observations: None

Construction Induced Runoff Observations: None

Daily Photo Documentation: Moving woody debris along shoreline; working platform construction; and additional containment boom installation.

Other:

WORK COMPLETED

1. Crew finalized construction (i.e., final grading) of working platform to STA 35+00.

2. Crew continued mixing bentonite slurry via venturi pumping. 20 bags of Naturalgel were used. Slurry pond was maintained at a full level and crew performed continuous mixing by recirculation pumping. Once wall excavation began, slurry was pumped to wall excavation area, as needed, to maintain a full trench during excavation.

3. Crew initiated excavation of S-B wall lead-in trench near STA 1+00 (perpendicular to slurry wall plan alignment). Limited buried wood debris was encountered to approx. 30' bgs. Two in-trench slurry samples were collected, approximately 2-ft below surface of slurry and approximately 2-ft from bottom of trench. Four soundings were measured from southeast to northwest. Measured depths were 65-ft, 65-ft, 63-ft, and 61.5-ft. Backfilling with S-B mix to begin tomorrow.

4. Crew proceeded with preconstruction activities for the sheet pile wall by pushing woody debris shoreward to make room for silt fencing. Debris was cleared to approx. STA 6+00 (to near existing line of pilings). Silt fencing and bio-bags were installed to approx. STA 5+75. Crew also cleared/grubbed bluff area near top of bank from approx. STA 1+00 to STA 6+00.

5. Crew began construction of sheet pile wall working platform along river bank. An approx. 8'-10' wide platform was constructed near the toe of the bank (landward of silt fencing) using an excavator and dozer. Platform was completed to approx. STA 2+50 to STA 6+00 by day's end.



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DAILY FIELD REPORT NO.: 6

Date: 4/8/2003 **Day:** Tuesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

6. Survey crew (David Evans and Associates) staked sheet pile wall alignment from STA 1+00 to STA 7+00. Crew set centerline stakes and 2 offsets (positioned shoreward of centerline) every 50'.

7. Additional 100' of containment boom was installed by West Coast Marine Cleaning in the Willamette River. Boom currently positioned from approx. 100' south of STA 1+00 to approx. STA 6+00.

NOTES/ISSUES

1. E & E (Chad Nancarrow), Remtech (Keith Carpenter), and Geosolutions (Chris Ryan) discussed buried woody debris issue near STA 37+00. Chad Nancarrow also contacted Zander Whitman to discuss this matter. E & E feels wall construction at this location should proceed per plan. The existing excavation walls (test pits) through the woody material appear stable and should not pose a problem for installation. Furthermore, existing boring data for this area indicates that the wood debris only extends to approx. 20' bgs, and is located above the water table. Limited wood material may get mixed with the slurry and subsequently with the S-B backfill, however the integrity of the wall will likely not be compromised. An option is to fully excavate the material (approx. 100' long x 20' wide x 20' deep or approx. 1500 cy), then backfill with soil material prior to slurry trench excavation; however, additional handling and disposal of the removed material would not be cost efficient. Therefore, the group agreed to excavate the slurry trench through this area per plan. The wood debris will be segregated to the highest extent possible and not be used in the S-B backfill mix.

2. E & E conducted site safety briefing with AINW to familiarize archeology crew of construction hazards and to establish work protocols. ODEQ representatives also attended briefing. Group held meeting in construction trailer then performed site walk.

Prepared By: Chad Nancarrow

Title: Project Engineer

Signature:

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DAILY FIELD REPORT NO.: 7

Date: 4/9/2003 **Day:** Wednesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: _____	Morning: 47 °F	Clean: _____
Part Cldy: X	Midday: 62 °F	Dusty: _____
Overcast: _____	Afternoon: 66 °F	Muddy: X
Rain: _____		Other: _____
Fog: _____		
Snow: _____		
Other: _____		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	13	Mark Henry on site
2	Geo-Solutions, Inc.	2	Chris Ryan on site

VISITORS

Time In	Time Out	Name	Representing	Remarks
11:00	15:00	Ryan Whitechurch	E & E	Installed pressure transducers
11:30	14:00	Kevin Parrett	ODEQ	Attended meeting w/ Tribe
11:30	14:00	Fenix Grange	ODEQ	Attended meeting w/ Tribe
11:30	14:00	John Montgomery	E & E	Attended meeting w/ Tribe
11:30	13:30	Perri McDaniel	Grand Ronde Tribe	Ceremony and site safety meeting
11:30	13:30	Don Day	Grand Ronde Tribe	Ceremony and site safety meeting
11:30	13:30	Aushwol Westley	Grand Ronde Tribe	Ceremony and site safety meeting
11:30	13:30	Joseph Brisbois	Grand Ronde Tribe	Ceremony and site safety meeting
11:30	14:00	David Ellis	AINW	Attended meeting w/ Tribe

MAJOR EQUIPMENT ON SITE

MATERIALS DELIVERED TO SITE

Manitowac 4000W Vicon Crane	4 loads of sheet pile (12 pairs of 60'; 10 pairs of 68')
Manitowac 3900W Vicon Crane	3 loads (truck and pup) of Wilken's clay
Gorman Rupp 55 Hp Slurry Pump	3 loads of Naturalgel bentonite (42 bags)
CAT 950 Loader	
Komatsu PC 1100LC Excavator w/ 80 ft Boom	
Komatsu PC 220LC Excavator	
2000 Gallon Water Truck	
Grove AMZ86XT Manlift	



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DAILY FIELD REPORT NO.: 7

Date: 4/9/2003 **Day:** Wednesday

Project Title: McCormick & Baxter Barrier Wall Construction

Client: ODEQ

E & E Project No.: 001688.OY02.25.01

John Deere 550H Tracked Dozer

CAT 322B Tracked Excavator

LULL 10K-54 Forklift

Venturi Slurry Mixer

I.C.E. Power Unit, Model 570

I.C.E. Vibratory Driver, Model 4450

CAT 426B (turbo) Backhoe

NONCONFORMANCES NOTED

WHO WAS NOTIFIED?

None

SAFETY CONCERNS NOTED

WHO WAS NOTIFIED?

None

RIVER CONDITIONS NOTED

Morrison Bridge Gage:

7.61 ft. NGVD

Recorded at 08:00 (low tide)

River Stage at Site:

7.51 ft. NGVD

NAPL Sheen Observations:

None

Construction Induced Runoff Observations:

None

Daily Photo Documentation:

E & E monitoring water elevation (surveying)

Other:

WORK COMPLETED

1. Crew continued mixing bentonite slurry via venturi pumping (in slurry pond). 17 bags of Naturalgel were used.

2. Crew completed excavation of S-B wall lead-in trench near STA 1+00 (perpendicular to slurry wall plan alignment). Four in-trench slurry samples were collected (beginning of shift and end of shift), approximately 2-ft below surface of slurry and approximately 2-ft from bottom of trench. Morning sampling results confirmed in conformance with specification requirements. Crew excavated from STA 38+68 to STA 38+20. Soundings were collected throughout the day. Final soundings for the day from station 38+68 to STA 38+30 indicated final trench depth was achieved at these locations. Backfill mixing (backfill and bentonite) began in preparation for trench backfilling.

3. Crew continued construction of sheet pile wall working platform along river bank. Crew built up pad to desired working elevation. Sheet pile power unit and vibratory driver were staged near top of bank.



ecology and environment, inc.

DAILY FIELD REPORT NO.: 7

Date: 4/9/2003 **Day:** Wednesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

NOTES/ISSUES

1. After investigation, E & E determined that the river stage at the site is 0.1 feet lower than the stage reported at Morrison Bridge, not -1.37 as reported in the CQAP (per communications with David Evans and Associates). All previous Daily Reports have been modified to incorporate this change. E & E crew also surveyed the elevation of the staff gauge recently installed at the site. To obtain the water stage elevation (NGVD) from the staff gauge, add 2.75 feet to the the recorded gauge height.
2. The Grand Rond Tribe performed a ceremony prior to excavation in the Archaeological Sensitive Area (ASA). Following the ceremony, E & E lead a site safety briefing to orient the tribal monitors to construction operations and hazards onsite.
3. E & E recorded two water meter readings to further investigate the possibility of a leak onsite (one at 1746 on 4/8/03 and one this morning at 7:35). The calculated leakage was approximately .72 gal/min (600 gallons).

Prepared By: Chad Nancarrow

Title: Project Engineer

Signature:

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DAILY FIELD REPORT NO.: 8

Date: 4/10/2003 Day: Thursday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: _____	Morning: 47 °F	Clean: _____
Part Cldy: _____	Midday: 52 °F	Dusty: _____
Overcast: X	Afternoon: 54 °F	Muddy: X
Rain: X		Other: _____
Fog: _____		
Snow: _____		
Other: _____		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	12	Mark Henry on site; Keith Carpenter off site
2	Geo-Solutions, Inc.	2	Chris Ryan on site
3	AINW	1	Todd Baker

VISITORS

Time In	Time Out	Name	Representing	Remarks
		Ryan Whitchurch	E & E	Downloading transducers
		Kevin Parrett	ODEQ	Weekly progress meeting
		Jill Kiernan	ODEQ	Weekly progress meeting
		Steve Campbell	ODEQ	Weekly progress meeting

MAJOR EQUIPMENT ON SITE

MATERIALS DELIVERED TO SITE

Manitowac 4000W Vicon Crane	2 loads (truck and pup) of Wilken's clay
Manitowac 3900W Vicon Crane	3 loads of Naturalgel bentonite (50 bags)
Gorman Rupp 55 Hp Slurry Pump	
CAT 950 Loader	
Komatsu PC 1100LC Excavator w/ 80 ft Boom	
Komatsu PC 220LC Excavator	
2000 Gallon Water Truck	
Grove AMZ86XT Manlift	
John Deere 550H Tracked Dozer	
CAT 322B Tracked Excavator	
LULL 10K-54 Forklift	
Venturi Slurry Mixer	



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DAILY FIELD REPORT NO.: 8

Date: 4/10/2003 **Day:** Thursday

Project Title: McCormick & Baxter Barrier Wall Construction

Client: ODEQ

E & E Project No.: 001688.OY02.25.01

I.C.E. Power Unit, Model 570

I.C.E. Vibratory Driver, Model 4450

CAT 426B (turbo) Backhoe

NONCONFORMANCES NOTED

WHO WAS NOTIFIED?

None

SAFETY CONCERNS NOTED

WHO WAS NOTIFIED?

Train parked on RR-xing blocking half access road (see notes).

UPRR, BNSF, Police, and ODEQ

RIVER CONDITIONS NOTED

Morrison Bridge Gage: 7.68 ft. NGVD

Recorded at 9:30 (low tide)

River Stage at Site: 7.58 ft. NGVD

NAPL Sheen Observations: None

Construction Induced Runoff Observations: None

Daily Photo Documentation: E & E monitoring water elevation (surveying)

Other:

WORK COMPLETED

1. Crew continued mixing bentonite slurry via venturi pumping (in slurry pond). 28 bags of Naturalgel were used.

2. Crew completed excavation of S-B wall trench to STA 37+60. Four in-trench slurry samples were collected (beginning of shift and end of shift), approximately 2-ft below surface of slurry and approximately 2-ft from bottom of trench. S-B mixing operations continued throughout day. Backfill consisting of soil bentonite mix was placed in lead-in trench throughout the day. Trench soundings were collected throughout the day to verify excavation depths and backfilling progress. Trench profiling at end of day indicated final trench depth was achieved at STA 37+60. Backfill depths varied from 54.5 feet to 60 feet below top of platform surface between STA 38+60 to STA 37+80.

3. Remtech Crew installed two sheets of 60-ft sheetpile starting at STA 2+50. Each sheet was driven to an approximate depth of 30-ft. Two I-beams placed on ground surface, parallel to wall alignment were used for lower template. A third I-beam was driven vertical at approximate STA 3+00 and will be used as the part of the upper template.



ecology and environment, inc.

DAILY FIELD REPORT NO.: 8

Date: 4/10/2003 **Day:** Thursday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

NOTES/ISSUES

1. E & E arrived onsite at 0600 and discovered that two trucks carrying bentonite were parked above the access gate blocking access to the residential complex. An individual was blocked from access to the residential complex by the trucks. E & E informed the truck drivers that it was a public access road and should not be blocked. E & E also relayed the observation to Remtech.
2. A train was found to be parked on the RR-xing blocking approximately half the access road to the site. Troy Feathers (superintendent) and E & E's safety officer determined this to be a potentially hazardous situation because of its potential to block emergency response vehicles and possibility of collision when workers or fueling truck passed around it. Therefore, E & E and Remtech attempted to contact UPRR to move it. The UPRR message service was reached and after repeated discussions and transfers to voice mail boxes that were full, E & E and Remtech decided to call 911. 911 was called at approximately 0638. After describing the situation, the response individual informed E & E that they have had little success getting parked trains to move. However, they contacted the railroad and informed them of the situation while E & E remained on hold. It was determined to be a BNSF train and E & E was directed to call back if train was not moved in ten minutes. At 0652 E & E called 911 for the second time. Again the response individual was informed of the situation. Further contact attempts were made directly to BNSF. E & E was not successful at making direct contact with BNSF personnel. However, E & E left a voicemail messages for Chris Borne (BNSF) at 07:58. The train was moved at 08:18.

Prepared By: Andrew Murphy

Title: Oversight Engineer

Signature:

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ecology and environment, inc.

DAILY FIELD REPORT NO.: 9

Date: 4/14/2003 **Day:** Monday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: _____	Morning: 45 °F	Clean: _____
Part Cldy: _____	Midday: 47 °F	Dusty: _____
Overcast: X	Afternoon: 50 °F	Muddy: X
Rain: X		Other: _____
Fog: _____		
Snow: _____		
Other: Moderate Wind		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	14	Keith Carpenter and Pat Garrett on site.
2	Geo-Solutions, Inc.	1	Chris Ryan off site
3	AINW	1	Todd Baker
4	Tacoma Drilling	2	Matt Graham and Matt Call

VISITORS

Time In	Time Out	Name	Representing	Remarks

MAJOR EQUIPMENT ON SITE	MATERIALS DELIVERED TO SITE
Manitowac 4000W Vicon Crane	2 loads (truck and pup) of Wilken's clay
Manitowac 3900W Vicon Crane	2 loads of Naturalgel bentonite (41 bags)
Gorman Rupp 55 Hp Slurry Pump	
CAT 950 Loader	
Komatsu PC 1100LC Excavator w/ 80 ft Boom	
Komatsu PC 220LC Excavator	
2000 Gallon Water Truck	
Grove AMZ86XT Manlift	
John Deere 550H Tracked Dozer	
CAT 322B Tracked Excavator	
LULL 10K-54 Forklift	
Venturi Slurry Mixer	



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DAILY FIELD REPORT NO.: 9

Date: 4/14/2003 **Day:** Monday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

I.C.E. Power Unit, Model 570

I.C.E. Vibratory Driver, Model 4450

CAT 426B (turbo) Backhoe

John Deere 200C Excavator

Small rubber tract drill rig

NONCONFORMANCES NOTED

WHO WAS NOTIFIED?

None

SAFETY CONCERNS NOTED

WHO WAS NOTIFIED?

None

RIVER CONDITIONS NOTED

Morrison Bridge Gage: 8.00 ft. NGVD Recorded at 1400 (low tide)

River Stage at Site: 7.90 ft. NGVD

NAPL Sheen Observations: None

Construction Induced Runoff Observations: None

Daily Photo Documentation: Video of slurry trench and sheet pile operations. Photos of clearing and grading and silt fence addition on west beach.

Other:

WORK COMPLETED

1. Crew continued mixing bentonite slurry via venturi pumping (in slurry pond). 25 bags of Naturalgel were used in the slurry pond. The number of bags used during the mixing operation was requested by E & E but was not available. E & E was informed that this information would be included in the weekly QC report.

2. Crew completed excavation of S-B wall trench to STA 37+10. Four in-trench slurry samples were collected (beginning of shift and end of shift), approximately 2-ft below surface of slurry and approximately 2-ft from bottom of trench. S-B mixing operations continued throughout day. Backfill consisting of soil bentonite mix was placed in lead-in trench throughout the day. Trench soundings were collected throughout the day to verify excavation depths and backfilling progress.

3. Remtech Crew installed five sheets of 60-ft sheet pile starting at STA 2+57 and ending at 2+80. Each sheet was driven to an approximate depth of 30-ft.

4. Crew cleared and graded from STA 14+50 to 16+00, silt fencing was installed along beach and upland from 14+00 to 15+00.

5. Well's EW-13, TM-1 and TM-2 were removed. EW-13 was not abandoned, Tacoma Pump had insufficient auger length to properly abandon well. The auger was jammed in TM-1 approximately 10' below ground surface. An excavator was used to pull lengths out and two bags of bentonite coarse grade hole plug were temporarily put in. Tacoma Pump will be out tomorrow with a larger rig to complete the well abandonment process.



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DAILY FIELD REPORT NO.: 9

Date: 4/14/2003 **Day:** Monday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

NOTES/ISSUES

1. Slurry level in the trench dropped considerably from Thursday afternoon to Friday morning, according to Rematch's James Beebe who performed a inspection at 08:00 Friday morning. Slurry was added to the trench which consumed approximately half of the total volume available in the slurry pond. Remtech and E & E performed inspections of the slurry in the trench at separate times on Saturday. Remtech is tracking hours required for inspection and response.

Prepared By: Andrew Murphy

Title: Oversight Engineer

Signature:

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DAILY FIELD REPORT NO.: 10

Date: 4/15/2003 **Day:** Tuesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: _____	Morning: 48 °F	Clean: _____
Part Cldy: _____	Midday: 58 °F	Dusty: _____
Overcast: X	Afternoon: 54 °F	Muddy: X
Rain: X		Other: _____
Fog: _____		
Snow: _____		
Other: Moderate Wind		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	13	Keith Carpenter and Pat Garrett on site.
2	Geo-Solutions, Inc.	1	Bruce George
3	AINW	1	Todd Baker
4	Tacoma Drilling	1	Matt Call
5	Holocene Drilling	2	Jay and Matt Graham
6	ADT	1	Neil Barrett
7	BEC/ADT	2	Chris Hatfield & Joe Hatfield

VISITORS

Time In	Time Out	Name	Representing	Remarks

MAJOR EQUIPMENT ON SITE

Manitowac 4000W Vicon Crane
Manitowac 3900W Vicon Crane
Gorman Rupp 55 Hp Slurry Pump
CAT 950 Loader
Komatsu PC 1100LC Excavator w/ 80 ft Boom
Komatsu PC 220LC Excavator
2000 Gallon Water Truck
Grove AMZ86XT Manlift
John Deere 550H Tracked Dozer
CAT 322B Tracked Excavator

MATERIALS DELIVERED TO SITE

2 loads (truck and pup) of Wilken's clay
1 loads of Naturalgel bentonite
2 trench boxes



ecology and environment, inc.

DAILY FIELD REPORT NO.: 10

Date: 4/15/2003 **Day:** Tuesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

LULL 10K-54 Forklift	
Venturi Slurry Mixer	
I.C.E. Power Unit, Model 570	
I.C.E. Vibratory Driver, Model 4450	
CAT 426B (turbo) Backhoe	
John Deere 200C Excavator	
Small rubber tract drill rig	
CASE 9030B Excavator	
Holocene Drill rig	

NONCONFORMANCES NOTED	WHO WAS NOTIFIED?
None	

SAFETY CONCERNS NOTED	WHO WAS NOTIFIED?
None	

RIVER CONDITIONS NOTED		
Morrison Bridge Gage:	8.28 ft. NGVD	Recorded at 1430 (low tide)
River Stage at Site:	8.18 ft. NGVD	
NAPL Sheen Observations:	None	
Construction Induced Runoff Observations:	None	
Daily Photo Documentation:	Overview of site from bridge, construction of S-B platform, and woody debris.	
Other:		

WORK COMPLETED
1. Crew continued mixing bentonite slurry via venturi pumping (in slurry pond). Seven bags of Naturalgel were used.
2. Crew completed excavation of S-B wall trench to STA 36+50. Approximately 60-ft of trench excavated today. Four in-trench slurry samples were collected (beginning of shift and end of shift), approximately 2-ft below surface of slurry and approximately 2-ft from bottom of trench. Sample also collected from slurry mixing pond. S-B mixing operations continued throughout day. Approximately 7 bags of bentonite used today in backfill mixing. Backfill consisting of soil bentonite mix was placed in lead-in trench throughout the day. Slump of backfill checked twice today. Slump on backfill placed in trench was 4-in. Profile soundings were collected at end of the day to verify depths and track backfill progress. Backfill is approximately 2.5 feet deep at STA 36+70 and gradually increases to platform surface at beginning of lead in trench.
3. Remtech Crew installed four sheets of 60-ft sheet pile starting at STA 2+80 and ending at STA 3+15. Each sheet was driven to an approximate depth of 30-ft.



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DAILY FIELD REPORT NO.: 10

Date: 4/15/2003 **Day:** Tuesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

4. Crew began construction of the working platform for S-B trench installation at STA 15+00 to 17+00. Construction included clearing and grubbing and initial grading through the railroad spur. Construction of the platform in this area is a modification to the original schedule and therefore, the well abandonment subcontractor did not move the appropriate drill rig. However, a larger more appropriate drill rig arrived to remove two wells identified in the well abandonment portion of the specifications and two more that were found to be in the way of operations. Mw-Fs was found to be in the way of the lead-in trench location designated by Remtech and EW-3s was within the side wall slope grading required for the working platform near Sta 16+50.

5. ADT crew (N. Barrett, C. Hatfield) located the 20" and 30" pressurized sewer lines at four locations using an excavator along the length of the sewer as it intersects the site. The depth of the line progressed from approximately 7 feet BGS to 12 feet BGS. The lines were observed to be constructed of iron pipe, and were separated by approximately 20", side to side. The 30" pipe's joints appear to be bolted flanges, no pipe joint was identified for the 20". Both sewer lines are coated with a thin black film that is in poor condition. Some corrosion was visible on the outside of the pipes. One excavation was backfilled, with a PVC pipe left in place vertically from each sewer line to the ground surface. This will allow the lines to be sounded in the future. The other three open excavations were surrounded by warning tape, and are expected to be filled tomorrow.

6. Well's TM-1 thru TM-5 were successfully decommissioned. Four to six bags of coarse grade bentonite hole plug were placed in each hole. A larger drill rig was brought out to abandon MW-Fs, EW-13, and EW-6s. EW-13 and MW-Fs were decommissioned today.

NOTES/ISSUES

None

Prepared By: Andrew Murphy

Title: Oversight Engineer

Signature:

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DAILY FIELD REPORT NO.: 11

Date: 4/16/2003 **Day:** Wednesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather

Clear: _____
Part Cldy: X
Overcast: X
Rain: _____
Fog: _____
Snow: _____
Other: Moderate Wind

Temperature

Morning: 48 °F
Midday: 53 °F
Afternoon: 55 °F

Site Conditions

Clean: _____
Dusty: _____
Muddy: X
Other: _____

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	13	Keith Carpenter and Pat Garrett on site.
2	Geo-Solutions, Inc.	1	Bruce George
3	AINW	1	Todd Baker
4	Tacoma Drilling	1	Matt Call
5	Holocene Drilling	2	Jay and Matt Graham
6	ADT	1	Neil Barrett
7	BEC/ADT	1	Chris Hatfield

VISITORS

Time In	Time Out	Name	Representing	Remarks
12:30	16:00	John Montgomery	E&E	Approximate time out
12:30	16:00	Mark Ochsner	E&E	Approximate time out
12:45	16:00	Steve Campbell	DEQ	Approximate time out
12:45	14:30	Jill Kiernan	DEQ	Approximate time out

MAJOR EQUIPMENT ON SITE

Manitowac 4000W Vicon Crane
Manitowac 3900W Vicon Crane
Gorman Rupp 55 Hp Slurry Pump
CAT 950 Loader
Komatsu PC 1100LC Excavator w/ 80 ft Boom
Komatsu PC 220LC Excavator
2000 Gallon Water Truck
Grove AMZ86XT Manlift

MATERIALS DELIVERED TO SITE

2 trench boxes



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DAILY FIELD REPORT NO.: 11

Date: 4/16/2003

Day: Wednesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

John Deere 550H Tracked Dozer	
CAT 322B Tracked Excavator	
LULL 10K-54 Forklift	
Venturi Slurry Mixer	
I.C.E. Power Unit, Model 570	
I.C.E. Vibratory Driver, Model 4450	
CAT 426B (turbo) Backhoe	
John Deere 200C Excavator	
Small rubber tract drill rig	
CASE 9030B Excavator	
Holocene Drill rig	

NONCONFORMANCES NOTED	WHO WAS NOTIFIED?
None	

SAFETY CONCERNS NOTED	WHO WAS NOTIFIED?
None	

RIVER CONDITIONS NOTED			
Morrison Bridge Gage:	9.00	ft. NGVD	Recorded at 1531 (low tide)
River Stage at Site:	8.90	ft. NGVD	
NAPL Sheen Observations:	None		
Construction Induced Runoff Observations:	None		
Daily Photo Documentation:	New section of working platform		
Other:			

WORK COMPLETED
1. No trenching today. Backfilling was continuous to raise bottom to elevation break at STA. 36+48. Trench bottom was cleaned prior to backfilling. Two in-trench slurry samples were collected (beginning of shift), approximately 2-ft below surface of slurry and approximately 2-ft from bottom of trench. Afternoon samples were not collected because no new slurry was added to the trench. A morning sample was also collected from slurry mixing pond. Approximately 11 bags of bentonite used in backfill mixing. Slump of backfill checked twice today. Each slump was 4-inches. Profile soundings were collected at end of the day to verify depths and track backfill progress. According to profile depths, an additional 7.5 feet of backfill will need to be added before excavation continues.
2. Remtech Crew installed thirteen sheets of 60-ft sheet pile starting at STA 3+15 and ending at STA 3+60. Each sheet was driven to an approximate depth of 30-ft.
3. Crew continues construction of the working platform for S-B trench installation at STA 15+00 to 17+00. Construction included initial grading through the railroad spur and preparation of the backfill mixing area.



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DAILY FIELD REPORT NO.: 11

Date: 4/16/2003 **Day:** Wednesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

4. ADT crew (N. Barrett and C. Hatfield), assisted by E & E (R. Whitchurch) filled in excavation 1, 2, and 3 that were dug yesterday. Two-inch PVC riser pipes were installed vertically, as the excavations were filled in, extending from the top of each exposed sewer line to the ground surface. This installation is intended to allow the sewer lines to be sounded for depth in the future, and to mark the locations of the lines at ground surface. It should be noted that the risers are not perfectly plumb, and in a few instances, deviated significantly from vertical. These problems could not be corrected given the time and materials available.

5. Wells EM-6s and EM-3s were abandoned.

NOTES/ISSUES

No field issues. Other notes and issues discussed in weekly meeting.

Prepared By: Mike Coenen and Erin Murphy

**Oversight Engineer and Biological
Title:** Monitor

Signature:

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DAILY FIELD REPORT NO.: 12

Date: 4/17/2003 Day: Thursday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: _____	Morning: 48 °F	Clean: _____
Part Cldy: X	Midday: 52 °F	Dusty: _____
Overcast: X	Afternoon: 50 °F	Muddy: X
Rain: X		Other: _____
Fog: _____		
Snow: _____		
Other: Moderate Wind		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	13	Mark H. and Pat G., managers onsite.
2	Geo-Solutions, Inc.	1	Bruce George, slurry trench specialist
3	AINW	1	Todd Baker
4	Geotech Explorations Inc.	3	Greg McInnis, Bradley James and Faushuo Ramirez
5	PacRim Geotechnical Inc.	2	Chris Nowak & Andre Mare (inclinometer installation oversight).
6	Brownfield Environmental Co.	1	Chris Hatfield to assist with inclinometer installation

VISITORS

Time In	Time Out	Name	Representing	Remarks
9:45	12:30	John Montgomery	E&E	reviewing boring data
7:00	13:15	Mark Ochsner	E&E	Inclinometer oversight

MAJOR EQUIPMENT ON SITE

MATERIALS DELIVERED TO SITE

Manitowac 4000W Vicon Crane	1 truck load bentonite (20 bags)
Manitowac 3900W Vicon Crane	
Gorman Rupp 55 Hp Slurry Pump	
CAT 950 Loader	
Komatsu PC 1100LC Excavator w/ 80 ft Boom	
Komatsu PC 220LC Excavator	
2000 Gallon Water Truck	
Grove AMZ86XT Man-lift	



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DAILY FIELD REPORT NO.: 12

Date: 4/17/2003 **Day:** Thursday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

John Deere 550H Tracked Dozer

CAT 322B Tracked Excavator

LULL 10K-54 Forklift

Venturi Slurry Mixer

I.C.E. Power Unit, Model 570

I.C.E. Vibratory Driver, Model 4450

CAT 426B (turbo) Backhoe

John Deere 200C Excavator

CASE 9030B Excavator

Geotech drill rig

NONCONFORMANCES NOTED

None

WHO WAS NOTIFIED?

SAFETY CONCERNS NOTED

A report of lightning south of Portland was relayed to E & E's SSO.

WHO WAS NOTIFIED?

Remtech's SSO.

RIVER CONDITIONS NOTED

Morrison Bridge Gage: 8.84 ft. NGVD Recorded at 1630 (low tide)

River Stage at Site: 8.74 ft. NGVD

NAPL Sheen Observations: None

Construction Induced Runoff Observations: None

Daily Photo Documentation: None

Other:

WORK COMPLETED

1. Remtech S-B wall excavation continued from STA 36+50 to 36+20. The bottom of the trench elevation at the stopping point is approximately 38 feet below platform height. The excavation stopped 30 feet beyond the bottom elevation transition point at STA 36+50 to allow for the required overlap for intersecting trenches. The backfill mix slump was 4-inches (specification requirement is 4-6-inches). The lead-in trench is now nearly backfilled to platform elevation. No new slurry was added to the trench today, therefore, no slurry samples were collected. Remtech plans to begin excavating the lead-in trench early next week, however, two days of inclinometer data are required prior to excavation.

2. Remtech sheet pile crew installed nine pairs of 60-ft sheet pile starting at STA 3+60 and ending at STA 3+90. Each sheet was initially driven to an approximate depth of 30-ft. Remtech then established a top elevation control at an elevation of 20 NGVD and proceeded to drive two panels to this elevation.

3. Remtech crew continues construction of the working platform for S-B trench installation at STA 15+00 to 19+00. Construction included clearing, grading and preparation of the backfill mixing area.



ecology and environment, inc.

DAILY FIELD REPORT NO.: 12

Date: 4/17/2003 **Day:** Thursday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

4. Remtech crew added the required additional silt fence along the west beach back from approximately STA 14+00 to approximately STA 11+50.

5. Geotech explorations (with oversight from E & E's Mark Oschner and the geotechnical subcontractor, PacRim) installed 2 inclinometers at STA 15+75 and plans to finish installing the last one at STA 18+00 tomorrow morning.

E & E retained Chris Hatfield, BEC, and the excavator used for sewer line potholing to assist with drill rig access. This was required because Remtech began early construction of the working platform on April 16, inhibiting drill rig access. Remtech scheduled working platform construction for April 21, as agreed during the progress meeting on April 10.

NOTES/ISSUES

None

Prepared By: Mike Coenen and Erin Murphy

**Oversight Engineer and Biological
Title:** Monitor

Signature:

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DAILY FIELD REPORT NO.: 13

Date: 4/21/2003 Day: Monday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: _____	Morning: 50 °F	Clean: _____
Part Cldy: _____	Midday: 54 °F	Dusty: _____
Overcast: X	Afternoon: 56 °F	Muddy: X
Rain: X		Other: _____
Fog: _____		
Snow: _____		
Other: _____		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	13	Mark H., manager onsite.
2	Geo-Solutions, Inc.	1	Bruce George, slurry trench specialist
3	PacRim Geotechnical Inc.	1	Andre Mare (inclinometer instruction).
4	Tacoma Drilling	4	Well Abandonment
5	David Evans and Associates	2	Wall alignment survey Sta. 15+00 to Sta. 18+00.

VISITORS

Time In	Time Out	Name	Representing	Remarks

MAJOR EQUIPMENT ON SITE

MATERIALS DELIVERED TO SITE

Manitowac 4000W Vicon Crane	1 truck load Naturalgel bentonite (17 bags).
Manitowac 3900W Vicon Crane	6 truck loads sheet pile: 24 pairs 60', 6 pairs 58'.
Gorman Rupp 55 Hp Slurry Pump	
CAT 950 Loader	
Komatsu PC 1100LC Excavator w/ 80 ft Boom	
Komatsu PC 220LC Excavator	
2000 Gallon Water Truck	
Grove AMZ86XT Man-lift	
John Deere 550H Tracked Dozer	



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DAILY FIELD REPORT NO.: 13

Date: 4/21/2003 **Day:** Monday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

CAT 322B Tracked Excavator	
LULL 10K-54 Forklift	
Venturi Slurry Mixer	
I.C.E. Power Unit, Model 570	
I.C.E. Vibratory Driver, Model 4450	
CAT 426B (turbo) Backhoe	
John Deere 200C Excavator	
Holocene drilling rig	
Case 9030B Excavator	
Ford cable winch	

NONCONFORMANCES NOTED	WHO WAS NOTIFIED?
None	

SAFETY CONCERNS NOTED	WHO WAS NOTIFIED?
None	

RIVER CONDITIONS NOTED			
Morrison Bridge Gage:	8.10	ft. NGVD	Recorded at 0630 (low tide)
River Stage at Site:	8.00	ft. NGVD	
NAPL Sheen Observations:	None		
Construction Induced Runoff Observations:	None		
Daily Photo Documentation:	None		

Other:

WORK COMPLETED

1. The S-B wall crew continued mixing and backfilling the trench near 37+00 throughout the day. To accelerate the process, a dozer is now being used to mix and push the slurry into the trench along with the excavator. Twelve bags of bentonite were used in backfill mixing. The backfill mix slump was 4-inches (specification requirement is 4-6-inches). The backfill was 21.5 feet below the platform surface at STA 36+30. The toe of the backfill is at approximate STA 36+20 and is daylighting, appearing above slurry, to STA 37+00. No new slurry was added to the trench today. In preparation for the lead-in trench excavation, slurry samples from the pond were collected in the morning and field testing results for viscosity, density, filtrate loss, and pH appear to be within specification requirements. The slurry pond was continually stirred by recirculation.
2. The sheet pile crew installed one pair of 60-ft sheet pile starting at STA 3+90 to a depth of approximately 30-ft. Previously placed sheets were driven to required depth (-40 feet NGVD), except for approximately 4 pair of sheets. The remaining sheets are anticipated to be driven to depth tomorrow. Remtech is now welding pairs together after they have been driven to depth which eliminates the tendency of pairs to slip relative to each other during adjacent pair driving.



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DAILY FIELD REPORT NO.: 13

Date: 4/21/2003 **Day:** Monday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

3. Remtech continued construction of the working platform for S-B trench installation at STA 15+00 to 19+00. Remtech moved the long stick excavator across the site to the working platform at the end of today in preparation for beginning trench excavation tomorrow.
4. Remtech added the required additional bio bags along the silt fence on the west beach from approximately STA 11+50 to approximately STA 15+00.
5. Tacoma Drilling successfully abandoned wells MW-4s and EW-11s. Tacoma Drilling was in the process of abandoning well MW-19s at the end of the work day.
6. Remtech began welding HDPE piping sections for slurry transfer line from pond to station STA 15+00.
7. The E&E oversight crew was trained on slope inclinometer and Sondex data collection by PacRim (Andre Mare). The two days of required inclinometer/sondex baseline data have been collected. The schedule for data collection from all three inclinometers is daily. The estimated time for data collection is one person for one to two hours per day. However, initially it will require two people.

NOTES/ISSUES

1. Remtech broke an on-site waterline while digging a shallow trench for the slurry transfer pipe to cross under an access road. Line was later repaired.
2. The E&E biological monitor discovered that the silt fencing was torn at one location along the west beach and panels were not properly overlapped. E & E notified Remtech.
3. E&E submitted Field Order 1 for wall realignment between STA 15+03.43 to STA 17+01.34 (Points numbers 13 and 15). The realignment eliminated the bend at STA 15+76.64 (Point number 14) in an effort to protect inclinometer number 1. The Field Order was approved by DEQ and Remtech was notified.

Prepared By:

Mike Coenen and Erin Murphy

Oversight Engineer and Biological

Title: Monitor

Signature:

Mike Coenen

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DAILY FIELD REPORT NO.: 14

Date: 4/22/2003 **Day:** Tuesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: _____	Morning: 49 °F	Clean: _____
Part Cldy: X	Midday: 51 °F	Dusty: _____
Overcast: X	Afternoon: 55 °F	Muddy: X
Rain: X		Other: _____
Fog: _____		
Snow: _____		
Other: Moderate Winds		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	13	Mark H., manager onsite.
2	Geo-Solutions, Inc.	1	Bruce George, slurry trench specialist
3	Tacoma Drilling	4	Well Abandonment
4	David Evans and Associates	2	Wall alignment survey STA 15+00 to STA 18+00.

VISITORS

Time In	Time Out	Name	Representing	Remarks
8:45	10:26	Alan Goodman	EPA	Site walk
8:45	10:26	Helen Hillman	NOAA	Site walk
8:45	10:26	Jill Kiernan	ODEQ	Site walk

MAJOR EQUIPMENT ON SITE

Manitowac 4000W Vicon Crane
Manitowac 3900W Vicon Crane
Gorman Rupp 55 Hp Slurry Pump
CAT 950 Loader
Komatsu PC 1100LC Excavator w/ 80 ft Boom
Komatsu PC 220LC Excavator
2000 Gallon Water Truck
Grove AMZ86XT Man-lift
John Deere 550H Tracked Dozer
CAT 322B Tracked Excavator

MATERIALS DELIVERED TO SITE

4 truck loads sheet pile: 25 pairs 60'.



ecology and environment, inc.

DAILY FIELD REPORT NO.: 14

Date: 4/22/2003 **Day:** Tuesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

LULL 10K-54 Forklift	
Venturi Slurry Mixer	
I.C.E. Power Unit, Model 570	
I.C.E. Vibratory Driver, Model 4450	
CAT 426B (turbo) Backhoe	
John Deere 200C Excavator	
Case 9030B Excavator	
Ford cable winch	
Holocene Drilling Rig	

NONCONFORMANCES NOTED	WHO WAS NOTIFIED?
None	

SAFETY CONCERNS NOTED	WHO WAS NOTIFIED?
None	

RIVER CONDITIONS NOTED			
Morrison Bridge Gage:	7.73	ft. NGVD	Recorded at 0730 (low tide)
River Stage at Site:	7.63	ft. NGVD	
NAPL Sheen Observations:	None		
Construction Induced Runoff Observations:	None		
Daily Photo Documentation:	None		
Other:			

WORK COMPLETED

1. The S-B wall crew backfilled the S-B trench from 36+20 to 37+00 (where they ended yesterday). The entire trench between STA 36+20 to 36+68 plus the lead-in trench has been backfilled to the platform elevation. 4 bags of bentonite were used in backfill mixing. The backfill mix slump was 5-inches (specification requirement is 4-6-inches) and the density was 118 lbs/cu. ft. Specifications require at least 84 lbs/cu. ft. Excavation began on the lead-in trench at STA 15+00. A profile was not collected at end of the day. Bruce George informed E&E that they will take profile measurements after cleaning the trench in the morning. Fresh slurry samples (morning only) and in-trench slurry samples, top and bottom, (afternoon only) were collected. No morning in-trench slurry samples were collected because the trench was started this morning and did not contain slurry at the beginning of the shift. Samples were analyzed for viscosity, filtrate, density, and pH. According to Bruce George, all results from these samples appear to be within the required specification ranges.
2. The sheet pile crew installed 60-ft sheet pile starting at STA 3+90 to STA 4+50. Previously placed sheets were driven to required depth (-40 feet NGVD), except for approximately 4 pair of sheets. The remaining sheets are anticipated to be driven to depth tomorrow. Remtech is now welding pairs together after they have been driven to depth which eliminates the tendency of pairs to slip relative to each other during adjacent pair driving.



ecology and environment, inc.

DAILY FIELD REPORT NO.: 14

Date: 4/22/2003 **Day:** Tuesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

3. Remtech continued construction of the working platform for S-B trench installation at STA 18+50. Excavated soil in this area had a strong mothball odor and is stained. Remtech operators upgraded to modified level C. E&E personnel stayed clear of the area or observed construction upwind.

4. Remtech repaired the required silt fence on the west beach at approximately STA 12+50.

5. Tacoma Drilling successfully abandoned well MW-19s.

6. The E&E oversight crew collected slope inclinometer and Sondex data. The schedule for future data collection is daily from I-1, and every other day from I-2 and I-3. The estimated time for data collection is two people for one to two hours per day.

NOTES/ISSUES

1. Remtech broke an on-site waterline on 4/21/03 while digging a shallow trench for the slurry transfer pipe to cross under an access road. The line was repaired later the that same day and this morning. However, the water pressure into the decontamination trailer is insufficient or the supply lines are blocked.

2. E&E was informed that some digging may have occurred prior to normal scheduled work hours on the lead-in trench area this morning.

Prepared By: Mike Coenen and Erin Murphy

**Oversight Engineer and Biological
Title:** Monitor

Signature:

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DAILY FIELD REPORT NO.: 15

Date: 4/23/2003 Day: Wednesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: _____	Morning: 44 °F	Clean: _____
Part Cldy: _____	Midday: 50 °F	Dusty: _____
Overcast: X	Afternoon: 52 °F	Muddy: X
Rain: Heavy (+.75")		Other: _____
Fog: _____		
Snow: _____		
Other: Moderate Winds		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	13	Mark H., manager onsite.
2	Geo-Solutions, Inc.	1	Bruce George, slurry trench specialist

VISITORS

Time In	Time Out	Name	Representing	Remarks
12:05	18:30	John Montgomery	E & E	Weekly meeting
12:05	18:30	Steve Campbell	ODEQ	Weekly meeting
12:05	18:30	Jill Kiernan	ODEQ	Weekly meeting

MAJOR EQUIPMENT ON SITE

Manitowac 4000W Vicon Crane
Manitowac 3900W Vicon Crane
Gorman Rupp 55 Hp Slurry Pump
CAT 950 Loader
Komatsu PC 1100LC Excavator w/ 80 ft Boom
Komatsu PC 220LC Excavator
2000 Gallon Water Truck
Grove AMZ86XT Man-lift
John Deere 550H Tracked Dozer
CAT 322B Tracked Excavator
LULL 10K-54 Forklift
Venturi Slurry Mixer

MATERIALS DELIVERED TO SITE

5 truck loads sheet pile: 25 pairs of 68'.
2 truck loads of bentonite (34 bags).



ecology and environment, inc.

DAILY FIELD REPORT NO.: 15

Date: 4/23/2003 **Day:** Wednesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

I.C.E. Power Unit, Model 570	
I.C.E. Vibratory Driver, Model 4450	
CAT 426B (turbo) Backhoe	
John Deere 200C Excavator	
Case 9030B Excavator	
Ford cable winch.	

NONCONFORMANCES NOTED	WHO WAS NOTIFIED?
None	

SAFETY CONCERNS NOTED	WHO WAS NOTIFIED?
None	

RIVER CONDITIONS NOTED			
Morrison Bridge Gage:	8.10	ft. NGVD	Recorded at 0830 (low tide)
River Stage at Site:	8.00	ft. NGVD	
NAPL Sheen Observations:	None		
Construction Induced Runoff Observations:	None		
Daily Photo Documentation:	None		
Other:			

WORK COMPLETED

1. Remtech completed the lead-in trench and proceeded with trench excavation starting at STA 15+00. Trench excavation stopped at STA 15+60 at a depth of 71-ft below platform elevation. Trench backfilling also started with placement of S-B backfill placement at lead-in trench STA 14+50. Initial slump test of backfill was 4.5-in. (Spec. requires slump between 4-in to 6-in.). A backfill sample was also collected for grain size analysis. Fresh slurry samples and in-trench slurry samples (top and bottom) were collected in morning and afternoon. Samples were analyzed for viscosity, filtrate, density, and pH. Bruce George informed E&E that all field analysis were within specifications. Twenty bags of bentonite were used in the slurry mixing pond. Two bags of bentonite were placed in the S-B backfill mix.
2. The sheet pile crew installed 60-ft sheet pile starting at STA 4+50 to STA 5+00 to an approximate depth of 30-ft BGS. Remtech continues to weld pairs together after they have been driven to depth which eliminates the tendency of pairs to slip relative to each other during adjacent pair driving. E&E was informed that one sheet pile pair met with refusal at an approximate tip depth of -35 NGVD on Monday and another today at approximately the same tip depth. All but, 13 pairs on the north end, the one pair that met with refusal, and two pairs on the south end are driven to depth.
3. Remtech continued construction of the working platform for S-B trench installation at STA 20+50. Clearing and grubbing and construction of a berm for the additional platform was started to approximately STA 24+00.
4. The E&E oversight crew collected slope inclinometer and Sondex data from I-1.



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DAILY FIELD REPORT NO.: 15

Date: 4/23/2003 Day: Wednesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

NOTES/ISSUES

1. Remtech broke an on-site waterline on 4/21/03 while digging a shallow trench for the slurry transfer pipe to cross under an access road. The line was repaired later the that same day. However, the water pressure into the decontamination trailer is insufficient or the supply lines are blocked.
2. E&E observed that Remtech moved trench spoils to clear area for mixing pad prior to 07:00 safety meeting.

Prepared By: Mike Coenen and Erin Murphy

Oversight Engineer and Biological
Title: Monitor

Signature:

Mike Coenen

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DAILY FIELD REPORT NO.:

16

Date: 4/24/2003

Day: Thursday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: _____	Morning: 41 °F	Clean: _____
Part Cldy: _____	Midday: 49 °F	Dusty: _____
Overcast: X	Afternoon: 51 °F	Muddy: X
Rain: X		Other: _____
Fog: _____		
Snow: _____		
Other: Moderate Winds		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	13	Mark Henry, manager onsite.
2	Geo-Solutions, Inc.	1	Bruce George, slurry trench specialist
3	David Evans and Associates	2	Stake sheet pile wall centerline and offsets near bulkhead.

VISITORS

Time In	Time Out	Name	Representing	Remarks
10:30	13:00	John Montgomery	E & E	Reasonable profile development/ Mark Henry

MAJOR EQUIPMENT ON SITE

MATERIALS DELIVERED TO SITE

Manitowac 4000W Vicon Crane
Manitowac 3900W Vicon Crane
Gorman Rupp 55 Hp Slurry Pump
CAT 950 Loader
Komatsu PC 1100LC Excavator w/ 80 ft Boom
Komatsu PC 220LC Excavator
2000 Gallon Water Truck
Grove AMZ86XT Man-lift
John Deere 550H Tracked Dozer
CAT 322B Tracked Excavator
LULL 10K-54 Forklift
Venturi Slurry Mixer
I.C.E. Power Unit, Model 570
I.C.E. Vibratory Driver, Model 4450

8 truck loads sheet pile: 40 pairs of 68 '
1 truck load of bentonite (17 bags).



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DAILY FIELD REPORT NO.:

16

Date: 4/24/2003

Day: Thursday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

CAT 426B (turbo) Backhoe

John Deere 200C Excavator

NONCONFORMANCES NOTED

WHO WAS NOTIFIED?

SAFETY CONCERNS NOTED

WHO WAS NOTIFIED?

RIVER CONDITIONS NOTED

Morrison Bridge Gage: Not Available

River Stage at Site: Not Available

NAPL Sheen Observations: None

Construction Induced Runoff Observations: None

Daily Photo Documentation: None

Other:

WORK COMPLETED

1. Trench excavation continued from STA 15+60 to STA 16+30. The finished depth in working area is 71-ft below the platform elevation. Trench backfilling was continuous throughout the day and by days end the toe of the backfill reached STA 15+90. Fresh slurry samples and in-trench slurry samples (top and bottom) were collected in the morning and the afternoon. Samples were analyzed for viscosity, filtrate, density, and pH. Bruce George informed E&E that all field analysis were within specifications. 27 bags of bentonite were used in the slurry mixing pond. 7 bags of bentonite were placed in the S-B backfill mix.

2. The sheet pile crew installed 60-ft and 68-ft sheet pile from STA 5+00 to STA 5+45 to an approximate depth of 30-ft BGS. 68-ft lengths began at STA 5+39.72. Remtech continues to weld pairs together after they have been driven to required depth, which eliminates the tendency of pairs to slip relative to each other during adjacent pair driving. E&E measured the height above the top elevation (20' NGVD) of the two sheet pile pairs that have encountered refusal. The sheet pile pair at STA 3+10 is approximately 52" above elevation 20" NGVD and the sheet pile pair at STA 4+45 is approximately 87" above elevation 20' NGVD. All but 13 pairs on the north end, the two pair that met with refusal, and two pairs on the south end are driven to depth. The two pairs on the south end will be utilized for alignment when the wall continues south from STA 2+50.

3. Remtech continued construction of the working platform for S-B trench installation at STA 20+50. Clearing and grubbing and construction of a berm for the additional platform was started to approximately STA 24+00.



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DAILY FIELD REPORT NO.:

16

Date: 4/24/2003

Day: Thursday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

NOTES/ISSUES

1. Remtech delivered the results for backfill sampling analysis from the offsite laboratory, Sierra Testing Laboratories, in a spreadsheet format. Six samples are recorded on the spreadsheet, however, only five sieve analysis (ASTM D422) results are shown and three preliminary permeability test (ASTM D5856) results are shown.

2. E&E received from PacRim recommendations related to the allowable ground movement. The allowable movement range is based on the recommended maximum allowable movement in instruments I-2 and I-3 (Vertical: 0.06-foot total or 0.03-foot within a 10-foot zone Lateral: 0.04-foot total or 0.02-foot within a 10-foot zone, on either axis).

Prepared By: Mike Coenen and Erin Murphy

Oversight Engineer and Biological
Title: Monitor

Signature:

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DAILY FIELD REPORT NO.: 17

Date: 4/28/2003 **Day:** Monday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: _____	Morning: 57 °F	Clean: _____
Part Cldy: _____	Midday: 68 °F	Dusty: X
Overcast: X	Afternoon: 65 °F	Muddy: X
Rain: _____		Other: _____
Fog: _____		
Snow: _____		
Other: <u>Gusty strong</u> Winds in the afternoon (15-20 mph)		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	13	Mark Henry, manager onsite.
2	Geo-Solutions, Inc.	1	Bruce George, slurry trench specialist

VISITORS

Time In	Time Out	Name	Representing	Remarks

MAJOR EQUIPMENT ON SITE

MATERIALS DELIVERED TO SITE

Manitowac 4000W Vicon Crane	4 truck loads sheet pile: 20 pairs of 68 '.
Manitowac 3900W Vicon Crane	1 truck load of bentonite (17 bags).
Gorman Rupp 55 Hp Slurry Pump	2 truck loads (truck and trailer) of Wilkens clay
CAT 950 Loader	
Komatsu PC 1100LC Excavator w/ 80 ft Boom	
Komatsu PC 220LC Excavator	
2000 Gallon Water Truck	
Grove AMZ86XT Man-lift	
John Deere 550H Tracked Dozer	
CAT 322B Tracked Excavator	
LULL 10K-54 Forklift	
Venturi Slurry Mixer	
I.C.E. Power Unit, Model 570	
I.C.E. Vibratory Driver, Model 4450	
CAT 426B (turbo) Backhoe	
John Deere 200C Excavator	



ecology and environment, inc.

DAILY FIELD REPORT NO.: 17

Date: 4/28/2003 **Day:** Monday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

NONCONFORMANCES NOTED

WHO WAS NOTIFIED?

None

SAFETY CONCERNS NOTED

WHO WAS NOTIFIED?

Blowing dust

Remtech's water truck operator.

RIVER CONDITIONS NOTED

Morrison Bridge Gage: 8.09 ft. NGVD Recorded at 1400 (low tide)

River Stage at Site: 7.99 ft. NGVD

NAPL Sheen Observations: None

Construction Induced Runoff Observations: None

Daily Photo Documentation: Photo's taken of dead Chinook.

Other:

WORK COMPLETED

1. Trench excavation continued from STA 16+30 to STA 17+30. Last marked record depth was at STA 17+10. E&E did not get depth at this location from Bruce George at day's end but will confirm depth in morning. Trench backfilling was continuous throughout the day, and by day's end the toe of the backfill reached STA 16+90. Fresh slurry samples and in-trench slurry samples (top and bottom) were collected in the morning and the afternoon. Samples were analyzed for viscosity, filtrate, density, and pH. Slump measurement for the S-B backfill mix (collected at 14:00) was 6-inches. Bruce George informed E&E that all field analyses were within specifications. 27 bags of bentonite were used in the slurry mixing pond. 7 bags of bentonite were placed in the S-B backfill mix.

2. The sheet pile crew placed 68-ft long sheet pile from STA 5+45 to STA 5+80. Currently, there are 79 pairs in place with 60 pairs driven to depth. The 68-ft lengths began at STA 5+39.72. Remtech continues to weld pairs together. One more pair was added to the list of those that have met with refusal. A pair directly adjacent to the pair at STA 4+45 met with refusal at approximately 79" above 20' NGVD. Remtech made a second attempted at driving the two adjacent pairs to depth. After 10-12 minutes of hammering, Remtech halted the attempt. One half of the sheet pile pair at STA 4+45 remains at approximately 87" above elevation 20' NGVD. However, the other half was driven to a depth of 39" above 20' NGVD.

NOTES/ISSUES

1. A dead wild Chinook King Salmon (*Oncorhynchus tshawytscha*) was found on the west beach approximately 10' Southeast of STA 12+00. The proper notifications were made to NOAA Law Enforcement and Dr. Nancy Munn of the Oregon NOAA branch. No request was made to preserve the dead Chinook.



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DAILY FIELD REPORT NO.: 17

Date: 4/28/2003 **Day:** Monday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

2. Remtech's backfill mixing crew struck and dislodged a monitoring wellhead. The monument and approximately 15-ft of 4" metal casing were extracted using an excavator. The well was located at approximately STA 16+00, and it appears to be EW-14s. The embossed well number on the monument was 60583. An E&E staff geologist located the coordinates of the former location along with the overall depth, top of casing elevation, and screened interval. The coordinates for its former location are N705051.1243 E7627628.5436. Remtech was informed that they will have to properly abandon the well and submit a start card.

Prepared By: E&E field staff

Oversight Engineers and Biological
Title: Monitor

Signature:

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DAILY FIELD REPORT NO.:

18

Date: 4/29/2003

Day: Tuesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: _____	Morning: 57 °F	Clean: _____
Part ClDY: _____	Midday: 68 °F	Dusty: _____
Overcast: X	Afternoon: 65 °F	Muddy: X
Rain: _____		Other: _____
Fog: _____		
Snow: _____		
Other: Moderate winds		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	13	Mark Henry, manager onsite.
2	Geo-Solutions, Inc.	1	Bruce George, slurry trench specialist

VISITORS

Time In	Time Out	Name	Representing	Remarks

MAJOR EQUIPMENT ON SITE

Manitowac 4000W Vicon Crane
Manitowac 3900W Vicon Crane
Gorman Rupp 55 Hp Slurry Pump
CAT 950 Loader
Komatsu PC 1100LC Excavator w/ 80 ft Boom
Komatsu PC 220LC Excavator
2000 Gallon Water Truck
Grove AMZ86XT Man-lift
John Deere 550H Tracked Dozer
CAT 322B Tracked Excavator
LULL 10K-54 Forklift
Venturi Slurry Mixer
I.C.E. Power Unit, Model 570
I.C.E. Vibratory Driver, Model 4450
CAT 426B (turbo) Backhoe
John Deere 200C Excavator

MATERIALS DELIVERED TO SITE

6 truck loads sheet pile: 24 pairs of 80', 10 pairs of 68'.
1 truck load of bentonite (17 bags).
6 truck loads (truck and trailer) of Will (192.3 Tons)



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DAILY FIELD REPORT NO.:

18

Date: 4/29/2003

Day: Tuesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

NONCONFORMANCES NOTED

WHO WAS NOTIFIED?

None

SAFETY CONCERNS NOTED

WHO WAS NOTIFIED?

None

RIVER CONDITIONS NOTED

Morrison Bridge Gage: 8.41 ft. NGVD Recorded at 1452 (low tide)

River Stage at Site: 8.31 ft. NGVD

NAPL Sheen Observations: None

Construction Induced Runoff Observations: None

Daily Photo Documentation:

Other:

WORK COMPLETED

1. Trench excavation continued from STA 17+30 to STA 18+20. Trench backfilling was continuous throughout the day. Soundings for backfill profile generation indicated that the toe was at approximately STA 17+90. The fresh slurry samples and in-trench slurry samples (top and bottom) were collected in the morning and the afternoon. Samples were analyzed for viscosity, filtrate, density, and pH. Slump measurements for the S-B backfill mix ranged from 4-in to 5-in. Bruce George informed E&E that all field analyses were within specifications. 14 bags of bentonite were used in the slurry mixing pond, and 8 bags of bentonite were placed in the S-B backfill mix.

2. The sheet pile crew placed 68-ft long sheet pile from STA 5+80 to STA 6+42. Currently, there are 94 pairs in place. Today, 15 pairs were set in place, and 15 pairs were driven to depth.

3. Remtech cut a notch through the bulkhead to allow installation of the sheet pile wall through this area. Approximately 45' of the top portion shoreward from the notch deflected southward as the forces on the bulkhead from the contained soil shifted. It was made apparent during this operation that the bulkhead has multiple tie backs (hold backs) as part of its retaining wall design. These tie backs are pairs of 4x8 treated lumber which are bolted to pilings on one end and bolted to several timbers acting as an anchor on the other end. There are some indications that the spacing of these members get closer together nearer the river. The tie backs extend approximately 35-feet to the northwest of the wall and are buried at varying depth. According to the superintendent, these timbers would cause refusal if encountered. Remtech's superintendent and E&E's oversight engineer agree that the alignment should be shifted to avoid these obstructions. E&E's project engineer was informed and is developing new coordinates for the turning point and alignment between points 6 and 7.



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DAILY FIELD REPORT NO.:

18

Date: 4/29/2003

Day: Tuesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

NOTES/ISSUES

1. Cherokee General will be on site tomorrow morning to pick up fencing and concrete blocks for the NU-Way site.
2. Excavation is entering the archaeological sensitive area (ASA).

Prepared By:

E&E field staff

Oversight Engineers and Biological

Title: Monitor

Signature:

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DAILY FIELD REPORT NO.: _____

19

Date: 4/30/2003

Day: Wednesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: _____	Morning: <u>51 °F</u>	Clean: _____
Part Cl dy: _____	Midday: <u>54 °F</u>	Dusty: _____
Overcast: <u>X</u>	Afternoon: <u>66 °F</u>	Muddy: <u>X</u>
Rain: _____		Other: _____
Fog: _____		
Snow: _____		
Other: <u>Moderate</u>		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	13	Mark Henry, manager onsite.
2	Geo-Solutions, Inc.	1	Bruce George, slurry trench specialist
3	Cherokee General	2	Picking up fence panels
4	AINW	1	Todd Backer, Archaeologist observation in ASA

VISITORS

Time In	Time Out	Name	Representing	Remarks
11:55	16:30	John Montgomery	E & E	Weekly meeting
11:55	16:30	Steve Campbell	DEQ	Weekly meeting
11:55	16:30	Kevin Parrett	DEQ	Weekly meeting

MAJOR EQUIPMENT ON SITE	MATERIALS DELIVERED TO SITE
Manitowac 4000W Vicon Crane	3 truck loads sheet pile: 16 pairs of 80', and 9 omega corners.
Manitowac 3900W Vicon Crane	1 truck load of bentonite (17 bags).
Gorman Rupp 55 Hp Slurry Pump	6 truck loads (truck and trailer) of Wilkens clay
CAT 950 Loader	
Komatsu PC 110LC Excavator w/ 80 ft Boom	
Komatsu PC 220LC Excavator	
2000 Gallon Water Truck	
Grove AMZ86XT Man-lift	
John Deere 550H Tracked Dozer	
CAT 322B Tracked Excavator	
LULL 10K-54 Forklift	
Venturi Slurry Mixer	
I.C.E. Power Unit, Model 570	
I.C.E. Vibratory Driver, Model 4450	



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DAILY FIELD REPORT NO.:

19

Date: 4/30/2003

Day: Wednesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

CAT 426B (turbo) Backhoe

John Deere 200C Excavator

NONCONFORMANCES NOTED

WHO WAS NOTIFIED?

None

SAFETY CONCERNS NOTED

WHO WAS NOTIFIED?

None

RIVER CONDITIONS NOTED

Morrison Bridge Gage: 8.54 ft. NGVD Recorded at 1530 (low tide)

River Stage at Site: 8.44 ft. NGVD

NAPL Sheen Observations: None

Construction Induced Runoff Observations: None

Daily Photo Documentation:

Other:

WORK COMPLETED

1. Trench excavation continued from STA 18+20 to STA 19+00. Record depths collected throughout the day ranged from 71.5 feet to 73 feet below platform surface (71 feet required). The long stick excavator is currently operating under overhead power lines and therefore, Remtech is utilizing a spotter who maintains line of sight to the operator and to the power lines. Trench backfilling was continuous throughout the day. End of day soundings indicated that the toe of the backfill was at approximately STA 18+70. Backfill has reached the platform surface at STA 14+75 of the lead-in trench (Note, the lead-in trench extends from 14+40 to 15+03). Fresh slurry samples and in-trench slurry samples (top and bottom) were collected in the morning and the afternoon. Samples were analyzed for viscosity, filtrate, density, and pH. A S-B mix sample was collected and field analyzed for density, slump, and grain size, "frying pan test" by Bruce George. Slump measurements for the S-B backfill mix were 4-inches in morning and afternoon. Bruce George informed E&E that he revised his backfill bentonite bag count for yesterday (04/29/03) from 8 bags to 10 bags. Today, 14 bags of bentonite were used in the slurry mixing pond and 11 bags of bentonite were placed in the S-B backfill mix.
2. The sheet pile crew placed 68-ft long sheet pile from STA 6+42 to approximately STA 7+10. Currently, there are 109 pairs in place. Today, 15 pairs were set, and 10 pairs were driven to depth today. Remtech continues to weld pairs together.
3. Remtech crew cleared along the bluff and wall alignment STA 12+50 to 8+82. Additional clearing will be completed prior to sheet pile installation in this area.
4. Silt fencing was installed along beach from approximate STA 13+00 to 8+82. Required bio bags will need to be properly installed prior to sheet pile construction at this location. Driftwood that interfered with silt fence alignment was relocated on the beach between the silt fence and the river.



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DAILY FIELD REPORT NO.:

19

Date: 4/30/2003

Day: Wednesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

NOTES/ISSUES

1. A 6" pipe was encountered which crosses alignment of the sheet pile near station 7+50. According to the design drawings, a waterline was to terminate in the vicinity of BW-32 but did not cross the wall alignment. Remtech exposed and field verified that this pipe extends until it protrudes out the embankment for the bulkhead. The pipe is terminated with a blind flange. Due to the uncertainty of its historic use, Remtech cut a small hole in the side while the water supply was shutdown. Water trickled out but when the water supply was turned back on it did not have supply pressure. A section of the pipe was cut to allow for the sheet pile wall and both cut ends will be capped using grout plugs by Remtech. The cut ends will be left exposed for inclusion in the as-built survey.

Prepared By:

E&E field staff

Oversight Engineers and Biological

Title: Monitor

Signature:

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DAILY FIELD REPORT NO.: 20

Date: 5/1/2003 **Day:** Thursday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: X (PM)	Morning: 47 °F	Clean: _____
Part Cldy: _____	Midday: 65 °F	Dusty: _____
Overcast: X (AM)	Afternoon: 68 °F	Muddy: X
Rain: _____		Other: _____
Fog: _____		
Snow: _____		
Other: _____		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	13	Mark Henry, manager onsite.
2	Geo-Solutions, Inc.	1	Bruce George, slurry trench specialist
3	AINW	1	Todd Backer, Archaeologist observation in ASA

VISITORS

Time In	Time Out	Name	Representing	Remarks

MAJOR EQUIPMENT ON SITE

MATERIALS DELIVERED TO SITE

Manitowac 4000W Vicon Crane	1 truck load of sheet pile: 4 pairs of 80'.
Manitowac 3900W Vicon Crane	1 truck load of bentonite (17 bags, 23.86 tons). The final delivery (original order).
Gorman Rupp 55 Hp Slurry Pump	6 truck loads (truck and trailer) of Wilkens clay
CAT 950 Loader	
Komatsu PC 1100LC Excavator w/ 80 ft Boom	
Komatsu PC 220LC Excavator	
2000 Gallon Water Truck	
Grove AMZ86XT Man-lift	
John Deere 550H Tracked Dozer	
CAT 322B Tracked Excavator	
LULL 10K-54 Forklift	
Venturi Slurry Mixer	
I.C.E. Power Unit, Model 570	
I.C.E. Vibratory Driver, Model 4450	
CAT 426B (turbo) Backhoe	



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DAILY FIELD REPORT NO.: 20

Date: 5/1/2003 **Day:** Thursday

Project Title: McCormick & Baxter Barrier Wall Construction **Client:** ODEQ
E & E Project No.: 001688.OY02.25.01

John Deere 200C Excavator

NONCONFORMANCES NOTED

WHO WAS NOTIFIED?

None

SAFETY CONCERNS NOTED

WHO WAS NOTIFIED?

None

RIVER CONDITIONS NOTED

Morrison Bridge Gage: 8.33 ft. NGVD Recorded at 1600 (low tide)

River Stage at Site: 8.23 ft. NGVD

NAPL Sheen Observations: None

Construction Induced Runoff Observations: None

Daily Photo Documentation: None

Other:

WORK COMPLETED

1. Trench excavation continued from STA 19+00 to STA 20+00. The long stick excavator moved beyond the overhead power lines at approximately 11:00 AM. Therefore, Remtech stopped utilizing the spotter. The end of day soundings indicated that the toe of the backfill was at approximately STA 19+90. The backfill has reached the working platform surface at STA 15+00, thus the lead-in trench is completely backfilled. Trenching was stopped at STA 20+00, where the trench bottom transitions from -46.25 NGVD to -13.00 NGVD. Excavation will stop until the backfill reaches -13.00 NGVD to allow for a continuous wall. Fresh slurry samples and in-trench slurry samples (top and bottom) were collected in the morning and the afternoon. Samples were analyzed for viscosity, filtrate, density, and pH. Slump measurements for the S-B backfill mix were within the required specification. A S-B mix sample was collected and field analyzed for density, slump, and grain size, "frying pan test" by Bruce George. Slump measurements for the S-B backfill mix were 4-inches in morning and 5-inches in the afternoon. 26 bags of bentonite were used in the slurry mixing pond and 11 bags of bentonite were placed in the S-B backfill mix.

2. The sheet pile crew placed 2 pairs 68-ft, 2 pairs of 70-ft, 2 pairs of 72-ft, and 3 pairs of 80-ft long sheet pile from STA 7+10 to approximately 7+45(revised). Currently, there are 118 pairs in place. 9 pairs were set and 10-12 were driven to depth today. The sheet pile length transition point (68' to 70' length) begins at STA 7+24. Remtech continues to weld pairs together.

3. Remtech crew continued clearing vegetation from STA 12+50 to 8+82. A few trees remain from 12+00 to 12+50. These are scheduled to be removed late next week.

4. Required bio bags were installed from approximate STA 13+00 to 8+82.

NOTES/ISSUES

None



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DAILY FIELD REPORT NO.: 20

Date: 5/1/2003 **Day:** Thursday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Prepared By: E&E field staff

Title: Monitor
Oversight Engineers and Biological

Signature:

M. L. Coene

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DAILY FIELD REPORT NO.:

21

Date: 5/5/2003

Day: Monday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: X (PM)	Morning: 46 °F	Clean: _____
Part Cldy: _____	Midday: 52 °F	Dusty: _____
Overcast: X (AM)	Afternoon: 55 °F	Muddy: X
Rain: _____		Other: _____
Fog: _____		
Snow: _____		
Other: Moderate winds		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	13	Mark Henry, manager onsite.
2	Geo-Solutions, Inc.	1	Bruce George, slurry trench specialist
3	David Evans and Associates	2	Staking sheet pile wall alignment.

VISITORS

Time In	Time Out	Name	Representing	Remarks
11:00	11:30	Andre Mare	PacRim	Site visit to Willamette Cove
16:00	17:45	Kevin Parrett	DEQ	Site Visit

MAJOR EQUIPMENT ON SITE	MATERIALS DELIVERED TO SITE
Manitowac 4000W Vicon Crane	6 truck loads (truck and trailer) of Wilkens clay
Manitowac 3900W Vicon Crane	
Gorman Rupp 55 Hp Slurry Pump	
CAT 950 Loader	
Komatsu PC 1100LC Excavator w/ 80 ft Boom	
Komatsu PC 220LC Excavator	
2000 Gallon Water Truck	
Grove AMZ86XT Man-lift	
John Deere 550H Tracked Dozer	
CAT 322B Tracked Excavator	
LULL 10K-54 Forklift	
Venturi Slurry Mixer	
I.C.E. Power Unit, Model 570	
I.C.E. Vibratory Driver, Model 4450	
CAT 426B (turbo) Backhoe	
John Deere 200C Excavator	



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DAILY FIELD REPORT NO.: 21

Date: 5/5/2003 **Day:** Monday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

NONCONFORMANCES NOTED

WHO WAS NOTIFIED?

None

SAFETY CONCERNS NOTED

WHO WAS NOTIFIED?

None

RIVER CONDITIONS NOTED

Morrison Bridge Gage: 7.50 ft. NGVD Recorded at 0530 (low tide)

River Stage at Site: 7.40 ft. NGVD

NAPL Sheen Observations: None

Construction Induced Runoff Observations: None

Daily Photo Documentation: None

Other:

WORK COMPLETED

1. S-B trench crew spent entire day backfilling. As the backfill was added to the trench, slurry was bailed using the long stick excavator to maintain the required slurry elevation. Excavation will not continue until the toe of the backfill reaches -13.00 NGVD (transition point STA 20+00). The end of day soundings indicated that the toe of the backfill was approximately 65-feet below the platform surface (approximately -40 NGVD) at STA 20+00. Backfill has reached the working platform surface at STA 16+10. Fresh slurry samples and in-trench slurry samples (top and bottom) were collected in the morning only. The slurry elevation was raised approximately 6-inches in the morning. No new slurry was added to the trench afterwards, therefore, no additional sampling was required. Samples were analyzed for viscosity, filtrate, density, and pH. A S-B mix sample was collected and field analyzed for density, slump, and grain size ("frying pan test") by Bruce George. Eighteen bags of bentonite were used in the S-B backfill mix. Slump measurement for the S-B backfill mix was 4-inches and within the required specification. No bentonite was added to the slurry mixing pond.

2. Sheet Pile installation continued today from approximately STA 7+45(revised) to approximately STA 7+73(revised). Currently, there are 125 pairs in place. 7 pairs were set and 11 were driven to depth. Remtech continues to weld pairs together.

3. Remtech crew continued clearing remaining vegetation from STA 12+50 to 8+82. A few trees remain from 12+00 to 12+50. These are scheduled to be removed late this week. Broken concrete and several boulders were moved from approximate STA 8+82 and placed near the bulkhead.

NOTES/ISSUES

None



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DAILY FIELD REPORT NO.: 21

Date: 5/5/2003 **Day:** Monday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Prepared By: E&E field staff

Title: Monitor
Oversight Engineers and Biological

Signature:

Mike Loane

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DAILY FIELD REPORT NO.: 22

Date: 5/6/2003

Day: Tuesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: X (PM)	Morning: 44 °F	Clean: _____
Part Cldy: _____	Midday: 53 °F	Dusty: _____
Overcast: X (AM)	Afternoon: 56 °F	Muddy: X
Rain: _____		Other: _____
Fog: _____		
Snow: _____		
Other: Moderate winds in PM		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	13	Mark Henry, manager onsite.
2	Geo-Solutions, Inc.	1	Bruce George, slurry trench specialist
3	Holocene Drilling/Tacoma Pump and Drilling	2	Performed shelby tube sampling.

VISITORS

Time In	Time Out	Name	Representing	Remarks

MAJOR EQUIPMENT ON SITE

Manitowac 4000W Vicon Crane
Manitowac 3900W Vicon Crane
Gorman Rupp 55 Hp Slurry Pump
CAT 950 Loader
Komatsu PC 1100LC Excavator w/ 80 ft Boom
Komatsu PC 220LC Excavator
2000 Gallon Water Truck
Grove AMZ86XT Man-lift
John Deere 550H Tracked Dozer
CAT 322B Tracked Excavator
LULL 10K-54 Forklift
Venturi Slurry Mixer
I.C.E. Power Unit, Model 570
I.C.E. Vibratory Driver, Model 4450
CAT 426B (turbo) Backhoe
John Deere 200C Excavator

MATERIALS DELIVERED TO SITE

6 truck loads (truck and trailer) of Wilkens clay



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DAILY FIELD REPORT NO.: 22

Date: 5/6/2003

Day: Tuesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

NONCONFORMANCES NOTED

WHO WAS NOTIFIED?

None

SAFETY CONCERNS NOTED

WHO WAS NOTIFIED?

None

RIVER CONDITIONS NOTED

Morrison Bridge Gage: 7.48 ft. NGVD Recorded at 0600 (low tide)

River Stage at Site: 7.38 ft. NGVD

NAPL Sheen Observations: None

Construction Induced Runoff Observations: None

Daily Photo Documentation: None

Other:

WORK COMPLETED

1. S-B trench crew spent the entire day backfilling. As the backfill was added to the trench, slurry was bailed using the long stick excavator to maintain the required slurry elevation. Excavation will not continue until the toe of the backfill reaches -13.00 NGVD (transition point STA 20+00). The end of day soundings indicated that the toe of the backfill was approximately 57-feet below the platform surface (approximately -32-ft. NGVD) at STA 20+00. Backfill has reached the working platform surface at approximately STA 17+00. Fresh slurry samples and in-trench slurry samples (top and bottom) were collected in the morning only. No fresh slurry was added to the trench, therefore, no additional sampling was required. Samples were analyzed for viscosity, filtrate, density, and pH. A S-B mix sample was collected and field analyzed for density, slump, and grain size ("frying pan test") by Bruce George. Fifteen bags of bentonite were used in the S-B backfill mix. Two slump measurements for the S-B backfill mix were collected. The morning result was 5-inches and the afternoon result was 4-inches, both within the required specification. No bentonite was added to the slurry mixing pond.

2. Sheet Pile installation continued today from approximately STA 7+73(revised) to approximately STA 7+94(revised). Currently, there are 130 pairs in place. 5 pairs were set and 9 were driven to depth. Remtech is having difficulty getting the sheet pile to depth on several 80' pairs and one 68' pair. It appears that the 68' pair (#116) encountered a subsurface object as it stop driving abruptly. However, the 80' pairs (#122, 123, 125, and 126) slowly stopped. The sound frequency of the hammer got lower and lower as the subsurface vibration intensified. Remtech believes that they have encountered a tighter formation or rock layer. A couple of the sheets fatigued and broke around the jaws of the hammer and one interlock heated up causing it to deform and failed above ground surface. No more attempts at driving will be made on the sheet with the failed interlock (#123) and will be considered to have met with refusal at 46" above design tip elevation. Remtech is considering adding ballast to the hammer and attempting to drive the others to depth tomorrow. Remtech continues to weld pairs together after final depth is achieved.



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DAILY FIELD REPORT NO.: 22

Date: 5/6/2003

Day: Tuesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

3. As requested by Remtech, E&E's engineer selected a location along the slurry trench wall alignment for verification sampling by Remtech's drilling subcontractor (Tacoma Pump and Drilling /Holocene Drilling). E&E's engineer directed the drilling crew to collect three Shelby tube samples using a hollow-stem auger from depth's 11'-14', 32'-35', and 48'-51' below platform surface using a 30" sampler, pushed at least 24" to obtain the required amount of sample. A working platform was constructed by Remtech using trench plates at the selected alignment location. The first attempt at drilling failed due to deflection of the auger to the north. The drill rig was then positioned further south which yielded a sample at 11' bgs. The sample appeared to be within the backfill, however, at depths greater then 13', wood debris, and wet sand were encountered. Therefore, the drill rig positioned for a third attempt. The location of this third position was arrived at using several bearings from the offset staking of the centerline that remains in place for wall alignment control. An unrecoverable sample was attempted from depths 32'-35'. It was speculated by the drilling crew that this sample was too wet to remain within the tube as it was extracted. Another attempted was made at the same location from depths 34'-37' with a 40% recovery. Several subsequent failed attempts were made.

NOTES/ISSUES

None

Prepared By: E&E field staff

Title: Oversight Engineers and Biological

Signature:

Mth. Lee

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DAILY FIELD REPORT NO.: 23

Date: 5/7/2003 **Day:** Wednesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

<u>Weather</u>	<u>Temperature</u>	<u>Site Conditions</u>
Clear: _____	Morning: 45 °F	Clean: _____
Part Cldy: _____	Midday: 56 °F	Dusty: _____
Overcast: X (AM)	Afternoon: 56 °F	Muddy: X
Rain: X (PM)		Other: _____
Fog: _____		
Snow: _____		
Other: Moderate winds in PM		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	13	Mark Henry, manager onsite.
2	Geo-Solutions, Inc.	1	Bruce George, slurry trench specialist

VISITORS

Time In	Time Out	Name	Representing	Remarks
13:00	16:45	Kevin Parrett	ODEQ	Weekly Meeting
13:00	16:45	John Montgomery	E&E	Weekly Meeting
13:00	16:45	Steve Campbell	ODEQ	Weekly Meeting
13:00	16:45	Jill Kiernan	ODEQ	Weekly Meeting
11:50	15:50	Mark Ochsner	E&E	Site visit
14:00	16:00	John Bodaly	St. John's paper	Story about project
14:00	16:00	Jackie McManust	St. John's paper	Story about project

MAJOR EQUIPMENT ON SITE	MATERIALS DELIVERED TO SITE
Manitowac 4000W Vicon Crane	6 truck loads (truck and trailer) of Wilkens clay
Manitowac 3900W Vicon Crane	
Gorman Rupp 55 Hp Slurry Pump	
CAT 950 Loader	
Komatsu PC 1100LC Excavator w/ 80 ft Boom	
Komatsu PC 220LC Excavator	
2000 Gallon Water Truck	
Grove AMZ86XT Man-lift	
John Deere 550H Tracked Dozer	
CAT 322B Tracked Excavator	
LULL 10K-54 Forklift	



ecology and environment, inc.

DAILY FIELD REPORT NO.: 23

Date: 5/7/2003 **Day:** Wednesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Venturi Slurry Mixer	
I.C.E. Power Unit, Model 570	
I.C.E. Vibratory Driver, Model 4450	
CAT 426B (turbo) Backhoe	
John Deere 200C Excavator	

NONCONFORMANCES NOTED	WHO WAS NOTIFIED?
None	

SAFETY CONCERNS NOTED	WHO WAS NOTIFIED?
None	

RIVER CONDITIONS NOTED		
Morrison Bridge Gage:	8.34	ft. NVGD Recorded at 0647 (low tide)
River Stage at Site:	8.24	ft. NVGD
NAPL Sheen Observations:	None	
Construction Induced Runoff Observations:	None	
Photo Documentation:	None	
Other:		

WORK COMPLETED

1. The S-B trench crew spent the entire day backfilling. As the backfill was added to the trench, slurry was bailed using the long stick excavator to maintain the required slurry elevation. The end of day soundings indicated that the toe of the backfill was approximately 38-feet below the platform surface (approximately -13-ft. NGVD) at STA 20+00. Therefore, trench excavation will continue on Thursday. The Backfill has reached the working platform surface at approximately STA 18+10. Fresh slurry samples and in-trench slurry samples (top and bottom) were collected in the morning only. No fresh slurry was added to the trench, therefore, no additional sampling was required. Samples were analyzed for viscosity, filtrate, density, and pH. A S-B mix sample was collected and field analyzed for density, slump, and grain size ("frying pan test") by Bruce George. Fourteen bags of bentonite were used in the S-B backfill mix. Two slump measurements for the S-B backfill mix were collected. The morning result was 5-inches and the afternoon result was 4-inches, both within the required specification. No bentonite was added to the slurry mixing pond.



ecology and environment, inc.

DAILY FIELD REPORT NO.: 23

Date: 5/7/2003 Day: Wednesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

2. Sheet Pile installation continued today from approximately STA 7+94(revised) to approximately STA 8+34(revised). Currently, there are 140 pairs in place. 10 pairs were set and 3.5 were driven to depth. Remtech is having difficulty getting the sheet pile to depth on several 80' pairs and one 68' pair. In an attempt to add more driving energy, Remtech added 10,000 pounds of ballast to the driving hammer making the total weight 25,000 pounds. Even with the additional weight, driving the 80' lengths to depth is hard. Several of the sheets slow considerably at top elevation of approximately 50' NGVD (approximate Tip elevation of -30 NGVD). Remtech made effort on the sheets that encountered refusal yesterday with the weighted hammer and by attempting to drive half pairs. Remtech was successful at driving half pairs to depth for #116 and #123.

3. Remtech completed abandonment of the underground utilities. The 6" waterline crossing the wall alignment at STA 28+25 was cut and capped using a mega-lug mechanical joint with a blind flange and then, as thrust protection, two pieces of flat stock steel were welded to the flange and then to the existing pipe. This form of thrust protection was employed by Remtech because they determined that reaching undisturbed soil (bearing soil) was not possible. Capping this line disconnected a considerable amount of the water service lines for the site. It is possible that some or all the leakage on this site is in the piping disconnected. Therefore, E&E's oversight engineer took evening water meter readings (11,968,200 cubic yards on the small meter) and will be reading the meter prior to the beginning of work in the morning.

NOTES/ISSUES

None

Prepared By: E&E field staff

Oversight Engineers and
Title: Biological Monitor

Signature:

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DAILY FIELD REPORT NO.: 24

Date: 5/8/2003 **Day:** Thursday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: _____	Morning: 50 °F	Clean: _____
Part Cldy: _____	Midday: 56 °F	Dusty: _____
Overcast: X	Afternoon: 60 °F	Muddy: X
Rain: _____		Other: _____
Fog: _____		
Snow: _____		
Other: Moderate winds in PM		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	13	Mark Henry, manager onsite.
2	Geo-Solutions, Inc.	1	Bruce George, slurry trench specialist

VISITORS

Time In	Time Out	Name	Representing	Remarks

MAJOR EQUIPMENT ON SITE

Manitowac 4000W Vicon Crane
Manitowac 3900W Vicon Crane
Gorman Rupp 55 Hp Slurry Pump
CAT 950 Loader
Komatsu PC 1100LC Excavator w/ 80 ft Boom
Komatsu PC 220LC Excavator
2000 Gallon Water Truck
Grove AMZ86XT Man-lift
John Deere 550H Tracked Dozer
CAT 322B Tracked Excavator
LULL 10K-54 Forklift
Venturi Slurry Mixer
I.C.E. Power Unit, Model 570
I.C.E. Vibratory Driver, Model 4450
CAT 426B (turbo) Backhoe
John Deere 200C Excavator

MATERIALS DELIVERED TO SITE

6 truck loads (truck and trailer) of Wilkens clay



ecology and environment, inc.

DAILY FIELD REPORT NO.: 24

Date: 5/8/2003 **Day:** Thursday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

NONCONFORMANCES NOTED

WHO WAS NOTIFIED?

None

SAFETY CONCERNS NOTED

WHO WAS NOTIFIED?

None

RIVER CONDITIONS NOTED

Morrison Bridge Gage: 8.18 ft. NGVD Recorded at 0818 (low tide)

River Stage at Site: 8.08 ft. NGVD

NAPL Sheen Observations: None

Construction Induced Runoff Observations: None

Photo Documentation: None

Other:

WORK COMPLETED

1. Trench excavation continued today starting at STA 20+00 and stopped at STA 21+50. Last required depth (38-ft below platform surface) was achieved at STA 21+00. Excavation will continue on Monday to bring the trench bottom to the required depth from STA 21+00 to STA 21+50. Backfilling continued throughout the day. At day's end, soundings indicated that the toe of the backfill was at STA 20+75. The backfill has reached the working platform surface at approximately STA 18+90. Fresh slurry samples and in-trench slurry samples were collected in the morning and afternoon. Samples were analyzed for viscosity, filtrate, density, and pH. A S-B mix sample was collected and field analyzed for density, slump, and grain size ("frying pan test") by Bruce George. 11 bags of bentonite were used in the S-B backfill mix and 20 bags of bentonite were used in the slurry pond. Two slump measurements for the S-B backfill mix were collected, one in the morning and one in the afternoon. Both results were 5-inches, which is within the required specification.

2. Sheet Pile installation continued today from approximately STA 8+34(revised) to approximately STA 8+58(revised). Currently, there are 145 pairs in place. 6 pairs were set, 6 were driven to depth, and 3 met with refusal. Remtech is having difficulty getting the sheet pile to depth on several 80' pairs. As a weekly progress action item, E&E was to monitor the difficulty closely and report as soon as possible to Kevin Parrett. The difficulty begins well below the fill material and therefore, moving the alignment may not improve the ability to get sheets to depth. E&E reported on progress to Kevin Parrett who concluded that we will continue with the alignment as is. Remtech hopes to be through the area Monday. Refusal sheets will be left for further attempts and documentation.



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DAILY FIELD REPORT NO.: 24

Date: 5/8/2003 **Day:** Thursday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

NOTES/ISSUES

None

Prepared By: E&E field staff

Title: Oversight Engineers

Signature:

A handwritten signature in black ink, appearing to read 'M-h' followed by a stylized name.

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DAILY FIELD REPORT NO.: 25

Date: 5/12/2003

Day: Monday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: X (PM)	Morning: 52 °F	Clean: _____
Part Cldy: _____	Midday: 58 °F	Dusty: X (PM)
Overcast: X (AM)	Afternoon: 64 °F	Muddy: _____
Rain: _____		Other: _____
Fog: _____		
Snow: _____		
Other: _____		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	12	Mark Henry, manager onsite.
2	Geo-Solutions, Inc.	1	Bruce George, slurry trench specialist

VISITORS

Time In	Time Out	Name	Representing	Remarks
10:45	12:30	Liz Phelan and Jim Gizzi	Hi-Cam	Photographers for Remtech

MAJOR EQUIPMENT ON SITE

MATERIALS DELIVERED TO SITE

Manitowac 4000W Vicon Crane	6 truck loads (truck and trailer) of Wilkens clay (183.7 tons)
Manitowac 3900W Vicon Crane	2 truck loads of bentonite (34 bags, 47.64 tons)
Gorman Rupp 55 Hp Slurry Pump	
CAT 950 Loader	
Komatsu PC 1100LC Excavator w/ 80 ft Boom	
Komatsu PC 220LC Excavator	
2000 Gallon Water Truck	
Grove AMZ86XT Man-lift	
John Deere 550H Tracked Dozer	
CAT 322B Tracked Excavator	
LULL 10K-54 Forklift	
Venturi Slurry Mixer	
I.C.E. Power Unit, Model 570	
I.C.E. Vibratory Driver, Model 4450	
CAT 426B (turbo) Backhoe	
John Deere 200C Excavator	



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DAILY FIELD REPORT NO.: 25

Date: 5/12/2003 **Day:** Monday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

NONCONFORMANCES NOTED

WHO WAS NOTIFIED?

None

SAFETY CONCERNS NOTED

WHO WAS NOTIFIED?

None

RIVER CONDITIONS NOTED

Morrison Bridge Gage:	6.11	ft. NGVD Recorded at 1230 (low tide)
River Stage at Site:	6.01	ft. NGVD
NAPL Sheen Observations:	yes (see Note 3. below)	
Construction Induced Runoff Observations:	None	
Photo Documentation:	None	
Other:		

WORK COMPLETED

1. Trench excavation continued today starting at STA 21+50 and stopped at STA 22+80. Last required depth (38-ft below platform surface) was achieved at STA 22+40. Backfilling continued throughout the day. At day's end, soundings indicated that the toe of the backfill was at STA 22+15. The backfill has reached the working platform surface at approximately STA 20+30. Fresh slurry samples and in-trench slurry samples were collected in the morning and afternoon. Samples were analyzed for viscosity, filtrate, density, and pH. Two S-B mix samples were collected (one in the morning and one in the afternoon) and field analyzed for density, slump, and grain size ("frying pan test") by Bruce George. Slump measurements were 5-inches for each sample, which is within the required specification. Thirteen bags of bentonite were used in the S-B backfill mix and 14 bags of bentonite were used in the slurry pond.

2. Sheet Pile installation continued today from approximately STA 8+58(revised) to approximately STA 8+82 (turning Point 7 along the shore). Note, the revised alignment did not match up exactly with surveyed Point 7 and is about 4-feet to the south. Currently, there are 159 pairs in place. 10 pairs were set, 6 were driven to depth, and 1/2 pair met with refusal. Remtech is having difficulty getting the sheet pile to depth on several 80' pairs. Refusal sheets will be left for further attempts and documentation.

NOTES/ISSUES

1. Remtech mobilized a larger dozer to the site to be utilized in the mixing operations. This change is an attempt keep backfill mixing and placing in pace with the excavation operation.



ecology and environment, inc.

DAILY FIELD REPORT NO.: 25

Date: 5/12/2003 **Day:** Monday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

2. The trenching operation has changed slightly since the wall depth transitioned to -13 feet NGVD. The CAT 322B excavator is utilized to excavate from existing ground to just above the platform elevation (25 feet NGVD). A bench is then constructed on one side of the trench, and a (1:1) side slope for stockpiled soil is constructed above it. This allows trench monitoring personnel safe access for backfill and depth measurements. After this, trench excavation continues using the Komatsu PC 1100LC Excavator w/ 80-ft. boom.

3. A small amount of sheen was observed along the shoreline near station 15+00 at approximately 15:30 hours. The containment boom was moved slightly downstream (approximately 5') to cover a small quantity accumulating due to onshore winds from the Northwest. The sheen appears as small isolated patches and does not have a rainbow coloration except when it is disturbed or an air bubble from beneath reaches the surface and breaks.

4. E&E's oversight engineer took one water meter reading on Wednesday evening (5/7) and then another the next morning (5/8) with the water supply into the site on and did not observe a change in the meter. The water supply was shut off this weekend and the meter was read on Thursday afternoon and then again on Monday morning prior to construction activities. No change in the meter was observed.

Prepared By: E&E field staff

Title: Oversight Engineers

Signature:

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DAILY FIELD REPORT NO.: 26

Date: 5/13/2003 **Day:** Tuesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: <u>X</u>	Morning: <u>52 °F</u>	Clean: <u> </u>
Part Cldy: <u> </u>	Midday: <u>64 °F</u>	Dusty: <u> </u>
Overcast: <u> </u>	Afternoon: <u>72 °F</u>	Muddy: <u> </u>
Rain: <u> </u>		Other: <u> </u>
Fog: <u> </u>		
Snow: <u> </u>		
Other: <u> </u>		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	13	Keith Carpenter & Mark Henry onsite
2	Geo-Solutions, Inc.	1	Bruce George, slurry trench specialist
3	I.C.E. Equipment	2	Replace hydraulic fittings
4	Essex Crane	1	Photographer
5	Hertz	1	Equipment maintenance

VISITORS

Time In	Time Out	Name	Representing	Remarks

MAJOR EQUIPMENT ON SITE

Manitowac 4000W Vicon Crane
Manitowac 3900W Vicon Crane
Gorman Rupp 55 Hp Slurry Pump
CAT 950 Loader
Komatsu PC 1100LC Excavator w/ 80 ft Boom
Komatsu PC 220LC Excavator
2000 Gallon Water Truck
Grove AMZ86XT Man-lift
CAT 322B Tracked Excavator
LULL 10K-54 Forklift,
Venturi Slurry Mixer
I.C.E. Power Unit, Model 570

MATERIALS DELIVERED TO SITE

6 truck loads (truck and trailer) of Wilkens clay (176.99 tons)



ecology and environment, inc.

DAILY FIELD REPORT NO.: 26

Date: 5/13/2003 **Day:** Tuesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

I.C.E. Vibratory Driver, Model 4450

CAT 426B (turbo) Backhoe

John Deere 200C Excavator

CAT D6 Tracked Dozer

NONCONFORMANCES NOTED

WHO WAS NOTIFIED?

None

SAFETY CONCERNS NOTED

WHO WAS NOTIFIED?

None

RIVER CONDITIONS NOTED

Morrison Bridge Gage: 6.17 ft. NGVD Recorded at 1330 (low tide)

River Stage at Site: 6.07 ft. NGVD

NAPL Sheen Observations: None

Construction Induced Runoff Observations: None

Photo Documentation: None

Other:

WORK COMPLETED

1. Trench excavation continued today starting at STA 22+80 and stopped at STA 24+00. Last required depth (38-ft below platform surface) was achieved at STA 24+00. Backfilling continued throughout the day. At day's end, soundings indicated that the toe of the backfill was at STA 23+70. The backfill has reached the working platform surface at approximately STA 21+80. Fresh slurry samples and in-trench slurry samples were collected in the morning and afternoon. Samples were analyzed for viscosity, filtrate, density, and pH. Two S-B backfill mix samples were collected and field analyzed for density, slump, and grain size ("frying pan test") by Bruce George. Slump measurements were 4-in. in the morning and 5-in. in the afternoon, both within the required specification. 16 bags of bentonite were used in the S-B backfill mix and 15 bags of bentonite were used in the slurry pond.

2. Sheet Pile installation continued today from approximately STA 9+37 to approximately STA 9+48. Currently, there are 172 pairs in place. 13.5 pairs were set, 13.5 were driven to depth, and 1 pair (80' sheet #150) previously attempted met with refusal at approximately 15' above tip elevation. All of the sheet piles set today were 68' lengths. Refusal sheets will be left for further attempts and documentation.



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DAILY FIELD REPORT NO.: 26

Date: 5/13/2003 **Day:** Tuesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

NOTES/ISSUES

1. The John Deere 550H Tracked Dozer was demobilized from the site today. Remtech decontaminated it by first shoveling off the larger clumps of S-B mix and then utilized a pressure washer. The pressure washing appeared to be taking a long time due to the S-B mix. The equipment was inspected by E&E and found to be sufficiently clean (i.e. no visible soil remaining). E&E is researching the possibility of offering the DEQ-owned steam cleaner to Remtech to speed up the decontamination process.

Prepared By: E&E field staff

Title: Oversight Engineers

Signature:

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DAILY FIELD REPORT NO.: 27

Date: 5/14/2003 **Day:** Wednesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: X (AM)	Morning: 56 °F	Clean: _____
Part Cldy: _____	Midday: 60 °F	Dusty: X
Overcast: X (PM)	Afternoon: 62 °F	Muddy: X
Rain: _____		Other: _____
Fog: _____		
Snow: _____		
Other: _____		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	13	Keith Carpenter & Mark Henry
2	Geo-Solutions, Inc.	1	Bruce George, slurry trench specialist

VISITORS

Time In	Time Out	Name	Representing	Remarks
9:35	11:35	Dave Anderson	DEQ	Site Tour
10:05	11:35	Mark Ochsner	E & E	Site Tour
10:05	11:35	Joe Mollusky	Port of Portland	Site Tour
12:55	15:55	Steve Campbell	DEQ	Weekly meeting
12:55	15:55	Jill Kiernan	DEQ	Weekly meeting
14:20	15:40	Tom Gainer	DEQ	Site Tour
14:20	15:40	Bruce Brody-Hein	DEQ	Site Tour
14:20	15:40	Rod Struck	DEQ	Site Tour
14:20	15:40	Matt McClincy	DEQ	Site Tour

MAJOR EQUIPMENT ON SITE

Manitowac 4000W Vicon Crane
Manitowac 3900W Vicon Crane
Gorman Rupp 55 Hp Slurry Pump
CAT 950 Loader
Komatsu PC 1100LC Excavator w/ 80 ft Boom
Komatsu PC 220LC Excavator
2000 Gallon Water Truck
Grove AMZ86XT Man-lift
CAT 322B Tracked Excavator
LULL 10K-54 Forklift

MATERIALS DELIVERED TO SITE

6 truck loads (truck and trailer) of Wilkens clay (176.69 tons)
1 truck loads of bentonite (17 bags, 23.83 tons)



ecology and environment, inc.

DAILY FIELD REPORT NO.: 27

Date: 5/14/2003 **Day:** Wednesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Venturi Slurry Mixer	
I.C.E. Power Unit, Model 570	
I.C.E. Vibratory Driver, Model 4450	
CAT 426B (turbo) Backhoe	
John Deere 200C Excavator	
Whisperwatt 100	
CAT D6 Tracked Dozer	

NONCONFORMANCES NOTED	WHO WAS NOTIFIED?
None	

SAFETY CONCERNS NOTED	WHO WAS NOTIFIED?
See note 1. below	

RIVER CONDITIONS NOTED		
Morrison Bridge Gage:	6.17	ft. NGVD Recorded at 1430 (low tide)
River Stage at Site:	6.07	ft. NGVD
NAPL Sheen Observations:	None	
Construction Induced Runoff Observations:	None	
Photo Documentation:	None	

Other:

WORK COMPLETED

1. Trench excavation continued today starting at STA 24+00 and stopped at STA 24+90. Required depth of 38-feet was also achieved at STA 24+90. See Notes/Issues below for an explanation regarding the close proximity of the excavation and backfill toe. Backfilling continued throughout the day. At day's end, soundings indicated that the toe of the backfill was at STA 24+90. The backfill has reached the working platform surface at approximately STA 23+30. In-trench slurry samples were collected in the morning and afternoon. Samples were analyzed for viscosity, filtrate, density, and pH. Two S-B backfill mix samples were collected and field analyzed for density, slump, and grain size ("frying pan test") by Bruce George. Slump measurements were 5-in. in the morning and 4-in. in the afternoon, both within the required specification. 15 bags of bentonite were used in the S-B backfill mix and 14 bags of bentonite were used in the slurry pond.

2. Sheet Pile installation continued today from approximately STA9+48 (staked) to approximately STA 9+90 (staked). Currently, there are 183 pairs in place. 11 pairs were set, 14 were driven to depth, and no refusals were encountered. All of the sheet piles set today were 68' lengths. Remtech and E&E are planning to measure the length of the wall tomorrow to check tracked quantities with actual quantities and to compare them to staked station locations. The actual length should be longer than staked survey due to wall alignment change in bulkhead area.



ecology and environment, inc.

DAILY FIELD REPORT NO.:

27

Date: 5/14/2003

Day: Wednesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

NOTES/ISSUES

1. Remtech's welder and sheet pile installation crew member (Dan Brookshire) was sent to a medical clinic after work today. His eye was irritated and enflamed, and they suspect that he had something in it (probably a metal shard). Attempts at flushing it out were unsuccessful. He was wearing approved safety glasses throughout the day. However, the nature of his work (torch cutting broken sheets, welding, and being in close proximity to sheet pile while they are driven) causes the need for him to switch types of eye protection several times a day and it is possible that the incident occurred during transition from one form to another. Also, safety glasses are not considered 100% protection against particulates from reaching the eyes. Goggles are considered to be the most protective but would not be helpful during the transition from one type of eye protection to another.

2. Although the backfill toe and excavation were at the same station (specifications require 30-ft minimum and 100-ft maximum between excavation and the backfill toe), this was considered necessary because the trench excavation is approaching the shop building, which will drastically restrict equipment access for placement of spoils and backfilling. Excavation stopped for the day at STA 24+90 to allow the backfill to catch up with excavation. This will allow for spoils placement and backfilling near the shop building without compromising the continuity of the wall. The backfill mixing placing area will move as close as possible to the NW side of the shop building until backfill can be placed on the SE side of the shop building. The backfill mixing area will then move to the SE side of the shop building.

Prepared By:

E&E field staff

Oversight Engineers and Biological

Title: Monitor

Signature:

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DAILY FIELD REPORT NO.: 28

Date: 5/15/2003 **Day:** Thursday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: _____	Morning: 46 °F	Clean: _____
Part Cldy: _____	Midday: 48 °F	Dusty: _____
Overcast: X	Afternoon: 55 °F	Muddy: X
Rain: X		Other: _____
Fog: _____		
Snow: _____		
Other: _____		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	13	Mark Henry
2	Geo-Solutions, Inc.	1	Bruce George, slurry trench specialist
3	Hertz Equipment Rental	1	Repaired broken fitting

VISITORS

Time In	Time Out	Name	Representing	Remarks

MAJOR EQUIPMENT ON SITE

MATERIALS DELIVERED TO SITE

Manitowac 4000W Vicon Crane	6 truck loads (truck and trailer) of Wilkens clay (175.33 tons)
Manitowac 3900W Vicon Crane	
Gorman Rupp 55 Hp Slurry Pump	
CAT 950 Loader	
Komatsu PC 1100LC Excavator w/ 80 ft Boom	
Komatsu PC 220LC Excavator	
2000 Gallon Water Truck	
Grove AMZ86XT Man-lift	
CAT 322B Tracked Excavator	
LULL 10K-54 Forklift	
Venturi Slurry Mixer	
I.C.E. Power Unit, Model 570	
I.C.E. Vibratory Driver, Model 4450	
CAT 426B (turbo) Backhoe	



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DAILY FIELD REPORT NO.: 28

Date: 5/15/2003 **Day:** Thursday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

John Deere 200C Excavator

Whisperwatt 100

CAT D6 Tracked Dozer

NONCONFORMANCES NOTED

WHO WAS NOTIFIED?

None

SAFETY CONCERNS NOTED

WHO WAS NOTIFIED?

None

RIVER CONDITIONS NOTED

Morrison Bridge Gage: 7.96 ft. NGVD Recorded at 1530 (low tide)

River Stage at Site: 7.86 ft. NGVD

NAPL Sheen Observations: None

Construction Induced Runoff Observations: None

Photo Documentation: None

Other:

WORK COMPLETED

1. Trench excavation continued today starting at STA 24+90 and stopped at STA 26+30. Required depth of 38-feet was achieved at STA 26+20. Backfilling continued throughout the day. At day's end, soundings indicated that the toe of the backfill was at STA 25+80. The backfill has reached the working platform surface at approximately STA 23+60. In-trench slurry samples were collected in the morning and afternoon. Samples were analyzed for viscosity, filtrate, density, and pH. Two S-B backfill mix samples were collected and field analyzed for density, slump, and grain size ("frying pan test") by Bruce George. Slump measurements were 5-in. in the morning and 4.5-in. in the afternoon, both within the required specification. 13 bags of bentonite were used in the S-B backfill mix and 12 bags of bentonite were used in the slurry pond.

2. Sheet Pile installation continued today from approximately STA 9+90 (staked) to approximately STA 10+46 (staked). Currently, there are 198 pairs in place. 15 pairs were set, 11 were driven to depth, and no refusals were encountered. All of the sheet piles set today were 68' lengths. Direct measurement of the installed sheet pile was postponed until Monday (a 300 ft. tape measure was not available).

NOTES/ISSUES

1. The overhead power line that supplies power to the office trailers will be disconnected on Monday morning. Temporarily, power will be supplied by a diesel generator (Whisperwatt 100). The power line is an overhead obstruction to the trenching and backfilling operations.



ecology and environment, inc.

DAILY FIELD REPORT NO.: 28

Date: 5/15/2003 **Day:** Thursday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Prepared By: E&E field staff

Title: Monitor
Oversight Engineers and Biological

Signature:

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DAILY FIELD REPORT NO.: 29

Date: 5/19/2003 **Day:** Monday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: X (AM)	Morning: 57 °F	Clean: _____
Part Cldy: X (PM)	Midday: 63 °F	Dusty: X
Overcast: _____	Afternoon: 72 °F	Muddy: _____
Rain: _____		Other: _____
Fog: _____		
Snow: _____		
Other: _____		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	13	Mark Henry
2	Geo-Solutions, Inc.	1	Bruce George, slurry trench specialist

VISITORS

Time In	Time Out	Name	Representing	Remarks

MAJOR EQUIPMENT ON SITE

MATERIALS DELIVERED TO SITE

Manitowac 4000W Vicon Crane	6 truck loads (truck and trailer) of Wilkens clay (176.64 tons)
Manitowac 3900W Vicon Crane	3 truck loads of bentonite (17 bags, 71.70 tons)
Gorman Rupp 55 Hp Slurry Pump	
CAT 950 Loader	
Komatsu PC 1100LC Excavator w/ 80 ft Boom	
Komatsu PC 220LC Excavator	
2000 Gallon Water Truck	
Grove AMZ86XT Man-lift	
CAT 322B Tracked Excavator	
LULL 10K-54 Forklift	
Venturi Slurry Mixer	
I.C.E. Power Unit, Model 570	
I.C.E. Vibratory Driver, Model 4450	
CAT 426B (turbo) Backhoe	
John Deere 200C Excavator	



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DAILY FIELD REPORT NO.: 29

Date: 5/19/2003 **Day:** Monday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Whisperwatt 100

CAT D6 Tracked Dozer

NONCONFORMANCES NOTED

WHO WAS NOTIFIED?

None

SAFETY CONCERNS NOTED

WHO WAS NOTIFIED?

None

RIVER CONDITIONS NOTED

Morrison Bridge Gage: 7.96 ft. NGVD Recorded at 0530 (low tide)

River Stage at Site: 7.86 ft. NGVD

NAPL Sheen Observations: None

Construction Induced Runoff Observations: None

Photo Documentation: None

Other:

WORK COMPLETED

1. Trench excavation continued today starting at STA 26+30 and stopped at STA 27+30. Required depth of 38-feet was achieved at STA 27+20. Backfilling continued throughout the day. At day's end, soundings indicated that the toe of the backfill was at STA 27+10. The backfill has reached the working platform surface at approximately STA 24+60. In-trench slurry samples were collected in the morning and afternoon. Samples were analyzed for viscosity, filtrate, density, and pH. Two S-B backfill mix samples were collected and field analyzed for density, slump, and grain size ("frying pan test") by Bruce George. Slump measurements were 4.5-in. in the morning and 5-in. in the afternoon, both within the required specification. 7 bags of bentonite were used in the S-B backfill mix and 18 bags of bentonite were used in the slurry pond.

2. Sheet Pile installation continued today from approximately STA 10+46 (staked) to approximately STA 11+00 (staked). Currently, there are 211 pairs in place. 13 pairs were set, 10 were driven to depth, and no refusals were encountered. All of the sheet piles set today were 68' lengths.

3. Vegetation was removed along west beach from approximately STA 12+00 to STA 12+50.

4. Remtech cut and capped a 4-inch ductile iron water line which supplied water to the shop area. The water line was not shown on the drawings. Remtech also cut and removed a section of an abandoned 8-inch steel pipe. The drawings appear to indicate that this line was a conveyance line from two production wells. Remtech said that they would leave the ends of the terminated pipes exposed for record survey.



ecology and environment, inc.

DAILY FIELD REPORT NO.: 29

Date: 5/19/2003 **Day:** Monday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

NOTES/ISSUES

1. The overhead power line that supplies power to the office trailers was disconnected today. Temporary power is being supplied by a diesel generator (Whisperwatt 100). The power line was an overhead obstruction to the trenching and backfilling operations.
2. Troy Feathers, Remtech's superintendent, and Erin Murphy, E&E's biological monitor, responded to a fisherman's plea for help at approximately 15:15. The fisherman had fallen out of his boat while trying to, "tie up to a dolphin" (a group of pilings) just offshore of the site. 911 was contacted immediately by Remtech and Erin radioed Andrew Murphy, oversight engineer, to get oars and personal flotation devices (PFDs) for the response boat staged on the beach. E&E rowed the boat to the victim and during the process a David Evans and Associates (DEA) survey boat became aware of the situation. Both boats arrived at about the same time. The victim had climbed up onto the dolphin but was too weak and shaky to climb aboard his boat. The victim was not wearing a PFD. E&E attempted to retrieve a PFD from the bow of the fisherman's boat, however, it was buried and lodged under the fisherman's gear. A DEA employee handed the victim his PFD which was too small. The DEA employee then assisted the victim onto the bow of the survey boat with considerable effort. A short while afterward, two sheriff patrol boats and a Portland Fire Bureau boat arrived to assist. The victim was transferred to the sheriff's boat for information gathering and subsequently returned to his boat. E&E returned to the shore at approximately 15:45.

Prepared By: E&E field staff

Title: Oversight Engineers and Biological Monitor

Signature:

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DAILY FIELD REPORT NO.: 30

Date: 5/20/2003 Day: Tuesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: _____	Morning: 62 °F	Clean: _____
Part Cldy: X	Midday: 65 °F	Dusty: X
Overcast: _____	Afternoon: 71 °F	Muddy: _____
Rain: X		Other: _____
Fog: _____		
Snow: _____		
Other: _____		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	12	Mark Henry not onsite.
2	Geo-Solutions, Inc.	1	Bruce George, slurry trench specialist
3	AINW	1	Todd Baker
4	Cascade Phillips	1	Service parts

VISITORS

Time In	Time Out	Name	Representing	Remarks
*See visitor list at end of report				

MAJOR EQUIPMENT ON SITE	MATERIALS DELIVERED TO SITE
Manitowac 4000W Vicon Crane	6 truck loads (truck and trailer) of Wilkens clay (189.91 tons)
Manitowac 3900W Vicon Crane	
Gorman Rupp 55 Hp Slurry Pump	
CAT 950 Loader	
Komatsu PC 1100LC Excavator w/ 80 ft Boom	
Komatsu PC 220LC Excavator	
2000 Gallon Water Truck	
Grove AMZ86XT Man-lift	
CAT 322B Tracked Excavator	
LULL 10K-54 Forklift	
Venturi Slurry Mixer	
I.C.E. Power Unit, Model 570	
I.C.E. Vibratory Driver, Model 4450	
CAT 426B (turbo) Backhoe	



ecology and environment, inc.

DAILY FIELD REPORT NO.: 30

Date: 5/20/2003 **Day:** Tuesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

John Deere 200C Excavator	
Whisperwatt 100	
John Deere 690 Excavator	
CAT D6 Tracked Dozer	

NONCONFORMANCES NOTED	WHO WAS NOTIFIED?
None	

SAFETY CONCERNS NOTED	WHO WAS NOTIFIED?
None	

RIVER CONDITIONS NOTED		
Morrison Bridge Gage:	7.77	ft. NGVD Recorded at 0630 (low tide)
River Stage at Site:	7.67	ft. NGVD
NAPL Sheen Observations:	None	
Construction Induced Runoff Observations:	None	
Photo Documentation:	None	
Other:		

WORK COMPLETED

1. Trench excavation continued today starting at STA 27+30 and stopped at STA 28+90. Required depth of 38-feet was achieved at STA 28+40. Backfilling continued throughout the day. At day's end, soundings indicated that the toe of the backfill was at STA 28+40. The backfill has reached the working platform surface at approximately STA 25+80. In-trench slurry samples were collected in the morning and afternoon. Samples were analyzed for viscosity, filtrate, density, and pH. Two S-B backfill mix samples were collected and field analyzed for density, slump, and grain size ("frying pan test") by Bruce George. Slump measurements were 5-in. in the morning and 4-in. in the afternoon, both within the required specification. 12 bags of bentonite were used in the S-B backfill mix and 9 bags of bentonite were used in the slurry pond.
2. Sheet Pile installation continued today from approximately STA 11+00 (staked) to approximately STA 11+55 (staked). Currently, there are 223 pairs in place. 12 pairs were set, 15 were driven to depth, and no refusals were encountered. All of the sheet piles set today were 68' lengths.
3. Remtech attempted to locate an underground water line crossing the slurry trench at STA 28+25 as shown on the drawings. They potholed beginning at STA 29+00 and worked their way down station to STA 28+00, excavating to a depth of approximately 8-ft. The water line was not found. Slurry trench excavation crossed the apparent intersection of this line and it was not encountered. Therefore, it is assumed that the water line does not exist.



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DAILY FIELD REPORT NO.: 30

Date: 5/20/2003 **Day:** Tuesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

NOTES/ISSUES

1. Slurry trench excavation encountered buried wood chip beginning at approximately STA 27+00 and has continued to the current station (see Item 1 of Work Completed above). The wood chip layer appeared to begin approximately 6-ft to 8-ft below the slurry surface and ended at approximately 20-ft below the slurry surface. The equipment operator segregated the wood chip into a separate stockpile but still within the bermed backfill mixing area. No backfill mixing started in this area today.
2. A drive unit for one of the tracks of Remtech's CAT 322B excavator failed today. It appears that the repair will take many days because the parts are being shipped from the east coast and installation of the parts will be complicated. Another excavator will be rented to substitute for the broken one.
3. There were two DEQ coordinated tours today.

Prepared By: E&E field staff

Oversight Engineers and Biological
Title: Monitor

Signature:

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ecology and environment, inc.

DAILY FIELD REPORT NO.: 31

Date: 5/21/2003

Day: Wednesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: <u>X</u>	Morning: <u>55 °F</u>	Clean: <u></u>
Part Cldy: <u></u>	Midday: <u>65 °F</u>	Dusty: <u>X</u>
Overcast: <u></u>	Afternoon: <u>75 °F</u>	Muddy: <u></u>
Rain: <u></u>		Other: <u></u>
Fog: <u></u>		
Snow: <u></u>		
Other: <u></u>		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	13	Mark Henry
2	Geo-Solutions, Inc.	1	Bruce George, slurry trench specialist

VISITORS

Time In	Time Out	Name	Representing	Remarks
13:10	16:30	John Montgomery	E&E	Onsite for weekly progress meeting.
9:00	15:00	Alexander Whitman	E&E	Onsite for weekly progress meeting.
10:30	16:30	Chad Nancarrow	E&E	Onsite for weekly progress meeting.
13:10	16:30	Kevin Parrett	DEQ	Onsite for weekly progress meeting.
10:15	11:10	Erin Lynch	E&E	Site Visit

MAJOR EQUIPMENT ON SITE

MATERIALS DELIVERED TO SITE

Manitowac 4000W Vicon Crane	6 truck loads (truck and trailer) of Wilkens clay (181.42 tons)
Manitowac 3900W Vicon Crane	1 truck load of bentonite (17 bags)
Gorman Rupp 55 Hp Slurry Pump	
CAT 950 Loader	
Komatsu PC 1100LC Excavator w/ 80 ft Boom	
Komatsu PC 220LC Excavator	
2000 Gallon Water Truck	
Grove AMZ86XT Man-lift	
CAT 322B Tracked Excavator	
LULL 10K-54 Forklift	
Venturi Slurry Mixer	
I.C.E. Power Unit, Model 570	
I.C.E. Vibratory Driver, Model 4450	
CAT 426B (turbo) Backhoe	



ecology and environment, inc.

DAILY FIELD REPORT NO.: 31

Date: 5/21/2003

Day: Wednesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

John Deere 200C Excavator	
Whisperwatt 100	
John Deere 690 Excavator	
CAT D6 Tracked Dozer	

NONCONFORMANCES NOTED	WHO WAS NOTIFIED?
-----------------------	-------------------

None

SAFETY CONCERNS NOTED	WHO WAS NOTIFIED?
-----------------------	-------------------

None

RIVER CONDITIONS NOTED

Morrison Bridge Gage:	7.31	ft. NGVD	Recorded at 0730 (low tide)
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River Stage at Site:	7.21	ft. NGVD
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NAPL Sheen Observations:	None
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Construction Induced Runoff Observations:	None
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Photo Documentation:	None
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Other:

WORK COMPLETED

1. Trench excavation continued today starting at STA 28+90 and stopped at STA 29+80. Required depth of 38-feet was achieved at STA 29+40. Backfilling continued throughout the day. At day's end, soundings indicated that the toe of the backfill was at STA 29+40. The backfill has reached the working platform surface at approximately STA 27+10. In-trench slurry samples were collected in the morning and afternoon. Samples were analyzed for viscosity, filtrate, density, and pH. Two S-B backfill mix samples were collected and field analyzed for density, slump, and grain size ("frying pan test") by Bruce George. Slump measurements were 5-in. in the morning and 4-in. in the afternoon, both within the required specification. 12 bags of bentonite were used in the S-B backfill mix and 7 bags of bentonite were used in the slurry pond.

2. Sheet Pile installation continued today from approximately STA 11+55 (staked) to approximately STA 11+70 (staked). However, installation was curtailed today due to equipment problems. One of the crane's picking cables required unspooling. Essex crane is expected in the morning to inspect the cable. A portion of the cable will be cut off and the remaining will be respooled if it passes inspection.



ecology and environment, inc.

DAILY FIELD REPORT NO.: 31

Date: 5/21/2003

Day: Wednesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

3. Remtech completed the additional task of excavating a pot hole in the area of the interceptor trench between the sheet pile wall and the piling wall adjacent to the bulkhead. The excavation is approximately 15-ft. long, 10-ft. wide, and 10-15-ft. deep. A geotextile separating material was encountered approximately 1-1.5-ft bgs. Below it 1.5-inch minus drain rock and soil was encountered. Sheen was observed on the groundwater when it was encountered at approximately 2-ft. bgs. It appeared that different phases of product were encountered during the excavation operation. Although no air monitoring device was used, the presence of strong noxious odors indicated the need for a higher level of PPE (i.e. respirators) near the excavation. Therefore, close proximity photographs will be taken tomorrow morning. The excavation spoils were placed within the barrier wall just shoreward of the sheet pile wall. Horizontal timbers were observed to be fastened to the piling wall at approximately 5-ft. bgs. Remtech believes that these horizontal timbers will make it difficult, if not impossible, to pull the pilings. To remove these horizontals and the pilings an excavation along the wall with dewatering pumps would be

NOTES/ISSUES

1. Buried wood chips are still present in the barrier wall trench to STA 29+80 at approximately the same depth and thickness as previously reported (see 5-20-03 Daily Field Report).

Prepared By: E&E field staff

**Oversight Engineers and Biological
Title:** Monitor

Signature:

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Date: 5/22/2003 **Day:** Thursday

Client: ODEQ

Manitowac 4000W Vicon Crane	6 truck loads (truck and trailer) of Wilkens clay (188.16 tons)
Manitowac 3900W Vicon Crane	2 truck load of sheet pile; 12 pairs, 68-ft in length.
Gorman Rupp 55 Hp Slurry Pump	
CAT 950 Loader	
Komatsu PC 1100LC Excavator w/ 80 ft Boom	
Komatsu PC 220LC Excavator	
2000 Gallon Water Truck	
Grove AMZ86XT Man-lift	
CAT 322B Tracked Excavator	
LULL 10K-54 Forklift	
Venturi Slurry Mixer	
I.C.E. Power Unit, Model 570	
I.C.E. Vibratory Driver, Model 4450	
CAT 426B (turbo) Backhoe	
John Deere 200C Excavator	
Whisperwatt 100	
John Deere 690 Excavator	



ecology and environment, inc.

DAILY FIELD REPORT NO.: 32

Date: 5/22/2003

Day: Thursday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

CAT D6 Tracked Dozer

NONCONFORMANCES NOTED

WHO WAS NOTIFIED?

None

SAFETY CONCERNS NOTED

WHO WAS NOTIFIED?

None

RIVER CONDITIONS NOTED

Morrison Bridge Gage: 7.31 ft. NGVD Recorded at 0830 (low tide)

River Stage at Site: 7.21 ft. NGVD

NAPL Sheen Observations: None

Construction Induced Runoff Observations: None

Photo Documentation: None

Other:

WORK COMPLETED

1. Trench excavation continued today starting at STA 29+80 and stopping at STA 30+80. The required depth of 38-feet was achieved at STA 30+80. Backfilling continued throughout the day. At day's end, soundings indicated that the toe of the backfill was at STA 30+50. The backfill has reached the working platform surface at approximately STA 28+10. In-trench slurry samples were collected in the morning and afternoon. Samples were analyzed for viscosity, filtrate, density, and pH. Two S-B backfill mix samples were collected and field analyzed for density, slump, and grain size ("frying pan test") by Bruce George. Slump measurements were 5-in. in the morning and 4-in. in the afternoon, both within the required specification. 12 bags of bentonite were used in the S-B backfill mix and 7 bags of bentonite were used in the slurry pond.

2. Sheet Pile installation continued today from approximately STA 11+70 (staked) to approximately STA 12+10 (staked). The last sheet pile pair set in place was number 237. The broken crane was repaired and operational for most of the day. Remtech requires more 68-ft. pairs and expects delivery on Tuesday after the holiday weekend.

NOTES/ISSUES

1. Buried wood chips are still present in the barrier wall trench to STA 30+40. The depth to the wood chip is approximately 10-ft below the slurry surface and ends at approximately 15-ft below the slurry surface (a lens of five feet).



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DAILY FIELD REPORT NO.: 32

Date: 5/22/2003

Day: Thursday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Prepared By: E&E field staff

Title: Monitor
Oversight Engineers and Biological

Signature:

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DAILY FIELD REPORT NO.: 33

Date: 5/27/2003 **Day:** Tuesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: _____	Morning: 59 °F	Clean: _____
Part Cldy: X	Midday: 71 °F	Dusty: X
Overcast: _____	Afternoon: 80 °F	Muddy: _____
Rain: _____		Other: _____
Fog: _____		
Snow: _____		
Other: _____		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	12	Mark Henry
2	Geo-Solutions, Inc.	1	Bruce George, slurry trench specialist
3	AINW	1	Todd Baker, Archeological monitor
4	David Evans and Associates	2	Survey crew

VISITORS

Time In	Time Out	Name	Representing	Remarks

MAJOR EQUIPMENT ON SITE	MATERIALS DELIVERED TO SITE
Manitowac 4000W Vicon Crane	6 truck loads (truck and trailer) of Wilkens clay (181.57 tons)
Manitowac 3900W Vicon Crane	3 truck loads of sheet pile; 15 pairs, 68-ft in length.
Gorman Rupp 55 Hp Slurry Pump	4 truck loads of bentonite 68 bags (95.41 tons).
CAT 950 Loader	
Komatsu PC 1100LC Excavator w/ 80 ft Boom	
Komatsu PC 220LC Excavator	
2000 Gallon Water Truck	
Grove AMZ86XT Man-lift	
CAT 322B Tracked Excavator	
LULL 10K-54 Forklift	
Venturi Slurry Mixer	
I.C.E. Power Unit, Model 570	
I.C.E. Vibratory Driver, Model 4450	
CAT 426B (turbo) Backhoe	
John Deere 200C Excavator	



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DAILY FIELD REPORT NO.: 33

Date: 5/27/2003

Day: Tuesday

Project Title: McCormick & Baxter Barrier Wall Construction

Client: ODEQ

E & E Project No.: 001688.OY02.25.01

Whisperwatt 100

John Deere 690 Excavator

CAT D6 Tracked Dozer

NONCONFORMANCES NOTED

WHO WAS NOTIFIED?

None

SAFETY CONCERNS NOTED

WHO WAS NOTIFIED?

None

RIVER CONDITIONS NOTED

Morrison Bridge Gage: 8.19 ft. NGVD Recorded at 1330 (low tide)

River Stage at Site: 8.09 ft. NGVD

NAPL Sheen Observations: None

Construction Induced Runoff Observations: None

Photo Documentation: Photos taken of the dead wild steelhead trout on shore near STA 10+35.

Other:

WORK COMPLETED

1. Trench excavation continued today starting at STA 30+80 and stopping at STA 32+20. The required depth of 38-feet was achieved at STA 32+10. Backfilling continued throughout the day. At day's end, soundings indicated that the toe of the backfill was at STA 31+80. The backfill has reached the working platform surface at approximately STA 29+40. In-trench slurry samples were collected in the morning and afternoon. Samples were analyzed for viscosity, filtrate, density, and pH. Two S-B backfill mix samples were collected and field analyzed for density, slump, and grain size ("frying pan test") by Bruce George. Slump measurements were 4-in. in the morning and 5-in. in the afternoon, both within the required specification. 9 bags of bentonite were used in the S-B backfill mix and 10 bags of bentonite were used in the slurry pond.

2. Sheet Pile installation continued today from approximately STA 12+10 (staked) to approximately STA 12+54 (staked). The last sheet pile placed today was number 248. One refusal at 48" above Remtech's control elevation (19.5 ft. NGVD) was encountered today. The outside temperature was relatively high (80°F) when compared to previous days, (60-70°F) and this, coupled with the hard driving of the refusal sheet, caused the power unit for the vibratory hammer to overheat. Remtech will attempt to drive the refusal pair to depth tomorrow morning when the ambient temperature is lower.



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DAILY FIELD REPORT NO.: 33

Date: 5/27/2003 **Day:** Tuesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

NOTES/ISSUES

1. Buried wood chips were no longer observed beginning at approximately STA 30+50.
2. A dead *Oncorhynchus mykiss* (Steelhead) approximately 28" in length washed ashore at 0830 this morning. Following the notification procedures specified in the Biological Monitoring and Reporting Plan, notification calls were made in a timely fashion to both the NOAA Law enforcement division and the Oregon NOAA habitat branch. No request was made by NOAA to bag or preserve the dead fish. Immediately after notifying NOAA, key project management personnel were contacted (i.e. Kevin Parrett, John Montgomery, and Noreen Roster).

Prepared By: E&E field staff

Oversight Engineers and Biological
Title: Monitor

Signature:

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DAILY FIELD REPORT NO.: 34

Date: 5/28/2003 **Day:** Wednesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: _____	Morning: 64 °F	Clean: _____
Part Cldy: X	Midday: 67 °F	Dusty: X
Overcast: _____	Afternoon: 77 °F	Muddy: _____
Rain: _____		Other: _____
Fog: _____		
Snow: _____		
Other: _____		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	12	Mark Henry
2	Geo-Solutions, Inc.	1	Bruce George, slurry trench specialist
3	AINW	1	Todd Baker, Archeological monitor
4	David Evans and Associates	2	Survey crew

VISITORS

Time In	Time Out	Name	Representing	Remarks
13:00	17:00	Kevin Parrett	ODEQ	Weekly Meeting
13:00	17:00	Steve Campbell	ODEQ	Weekly Meeting
13:00	17:00	John Montgomery	E & E	Weekly Meeting
10:55	17:00	Chad Nancarrow	E & E	Weekly Meeting

MAJOR EQUIPMENT ON SITE

Manitowac 4000W Vicon Crane
Manitowac 3900W Vicon Crane
Gorman Rupp 55 Hp Slurry Pump
CAT 950 Loader
Komatsu PC 1100LC Excavator w/ 80 ft Boom
Komatsu PC 220LC Excavator
2000 Gallon Water Truck
Grove AMZ86XT Man-lift
CAT 322B Tracked Excavator
LULL 10K-54 Forklift
Venturi Slurry Mixer
I.C.E. Power Unit, Model 570
I.C.E. Vibratory Driver, Model 4450

MATERIALS DELIVERED TO SITE

3 truck loads (truck and trailer) of Wilkens clay (86.09 tons)
2 truck loads of sheet pile; 10 pairs, 68-ft in length.



ecology and environment, inc.

DAILY FIELD REPORT NO.: 34

Date: 5/28/2003

Day: Wednesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

CAT 426B (turbo) Backhoe	
John Deere 200C Excavator	
Whisperwatt 100	
John Deere 690 Excavator	
CAT D6 Tracked Dozer	

NONCONFORMANCES NOTED	WHO WAS NOTIFIED?
None	

SAFETY CONCERNS NOTED	WHO WAS NOTIFIED?
None	

RIVER CONDITIONS NOTED			
Morrison Bridge Gage:	10.08	ft. NGVD	Recorded at 1430 (low tide)
River Stage at Site:	9.98	ft. NGVD	
NAPL Sheen Observations:	None		
Construction Induced Runoff Observations:	None		
Photo Documentation:			
Other:			

WORK COMPLETED
1. Trench excavation continued today starting at STA 32+20 and stopping at STA 33+30. The required depth of 38-feet was achieved at STA 33+30. Backfilling continued throughout the day. At day's end, soundings indicated that the toe of the backfill was at STA 32+95. The backfill has reached the working platform surface at approximately STA 30+70. In-trench slurry samples were collected in the morning and afternoon. Samples were analyzed for viscosity, filtrate, density, and pH. Two S-B backfill mix samples were collected and field analyzed for density, slump, and grain size ("frying pan test") by Bruce George. Slump measurements were 4.5-in. in the morning and 4-in. in the afternoon, both within the required specification. 10 bags of bentonite were used in the S-B backfill mix and 10 bags of bentonite were used in the slurry pond.
2. Sheet Pile installation continued today from approximately STA 12+54 (staked) to approximately STA 12+99 (staked). No refusals were encountered today. However, one sheet (#251) was difficult to drive to-depth. Remtech was able to drive the sheet pile pair that met with refusal yesterday to depth. Although all sheet pile pairs are deeper than or at design depth, the top elevation of the wall varies. The variation is no greater than one foot, and Remtech will be adjusting the top elevations for aesthetic purposes.



ecology and environment, inc.

DAILY FIELD REPORT NO.:

34

Date: 5/28/2003

Day: Wednesday

Project Title: McCormick & Baxter Barrier Wall Construction

Client: ODEQ

E & E Project No.: 001688.OY02.25.01

NOTES/ISSUES

1. Buried wood chips were observed beginning at approximately STA 33+00. The lens appeared to begin at approximately 15-ft bgs. deep and was approximately 3-ft. to 5-ft. thick.

2. Water levels are significantly higher today due to spring runoff and seasonal high tides. Impacts are being realized to site erosion control measures (silt fence) and the containment boom. Multiple panels were damaged last night, and at the beginning of the shift, the biological monitor noticed that the upstream end of the containment boom was out in the river. The boom was anchored to a log that floated off during the high tide. WCMC was contacted, and the problem was corrected within 10 minutes of notification. The highest water level according to the river gauge data taken at the Morrison Bridge was 10.41 ft NGVD at approximately 5:30 AM.

Prepared By:

E&E field staff

Oversight Engineers and Biological

Title: Monitor

Signature:

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DAILY FIELD REPORT NO.: 35

Date: 5/29/2003 **Day:** Thursday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: _____	Morning: 64 °F	Clean: _____
Part Cldy: <u>X</u>	Midday: 67 °F	Dusty: <u>X</u>
Overcast: _____	Afternoon: 77 °F	Muddy: _____
Rain: _____		Other: _____
Fog: _____		
Snow: _____		
Other: _____		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	12	Mark Henry
2	Geo-Solutions, Inc.	1	Bruce George, slurry trench specialist
3	AINW	1	Todd Baker, Archeological monitor
4	Port Glass	1	Windshield replacement
5	Modern	1	Maintenance on the PC1100
6	Halton Rentals	2	Equipment maintenance

VISITORS

Time In	Time Out	Name	Representing	Remarks
14:30	16:00	Kevin Parrett	ODEQ	Site tour
14:30	16:00	Mark Pugh	ODEQ	Site tour
14:30	16:00	Rod Reick	ODEQ	Site tour
13:00	17:00	Ryan Whitchurch	E & E	Transducer download

MAJOR EQUIPMENT ON SITE

MATERIALS DELIVERED TO SITE

Manitowac 4000W Vicon Crane	2 truck loads (truck and trailer) of Wilkens clay (64.04 tons)
Manitowac 3900W Vicon Crane	5 truck loads of sheet pile; 15 pairs (68-ft) and 12 pairs (80-ft)
Gorman Rupp 55 Hp Slurry Pump	
CAT 950 Loader	
Komatsu PC 1100LC Excavator w/ 80 ft Boom	
Komatsu PC 220LC Excavator	
2000 Gallon Water Truck	
Grove AMZ86XT Man-lift	
CAT 322B Tracked Excavator	
LULL 10K-54 Forklift	



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DAILY FIELD REPORT NO.: 35

Date: 5/29/2003 Day: Thursday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Venturi Slurry Mixer	
I.C.E. Power Unit, Model 570	
I.C.E. Vibratory Driver, Model 4450	
CAT 426B (turbo) Backhoe	
John Deere 200C Excavator	
Whisperwatt 100	
John Deere 690 Excavator	
CAT D6 Tracked Dozer	
CAT D6 Tracked Dozer	

NONCONFORMANCES NOTED	WHO WAS NOTIFIED?
None	

SAFETY CONCERNS NOTED	WHO WAS NOTIFIED?
None	

RIVER CONDITIONS NOTED			
Morrison Bridge Gage:	9.25	ft. NGVD	Recorded at 1500 (low tide)
River Stage at Site:	9.15	ft. NGVD	
NAPL Sheen Observations:	None		
Construction Induced Runoff Observations:	None		
Photo Documentation:	None		

Other:

WORK COMPLETED

1. Trench excavation continued today starting at STA 33+30 and stopping at STA 34+10. The required depth of 38-feet was achieved at STA 34+10. Backfilling continued throughout the day. At day's end, soundings indicated that the toe of the backfill was at STA 33+80. The backfill has reached the working platform surface at approximately STA 31+60. In-trench slurry samples were collected in the morning and afternoon. Samples were analyzed for viscosity, filtrate, density, and pH. Two S-B backfill mix samples were collected and field analyzed for density, slump, and grain size ("frying pan test") by Bruce George. Slump measurements were 5-in. in the morning and 4-in. in the afternoon, both within the required specification. 9 bags of bentonite were used in the S-B backfill mix and 5 bags of bentonite were used in the slurry pond.

2. Sheet Pile installation continued today from approximately STA 12+99 (staked) to approximately STA 13+37 (staked). No refusals were encountered today. By day's end, Remtech had set in placed sheet pile pair number 270 and there were 16 pairs driven to depth.



ecology and environment, inc.

DAILY FIELD REPORT NO.: 35

Date: 5/29/2003 **Day:** Thursday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

NOTES/ISSUES

1. Buried wood chips continue to be observed in the trench excavation. The buried wood chip lens appears to be approximately 3 to 5-feet thick. The top surface is approximately 15-ft below the slurry surface at the stopping location (STA 34+10).
2. Remtech has exchanged the D6 CAT dozer that was being utilized in the mixing operation with another the same size and make. Remtech is using DEQ's steam cleaner to decontaminate the one being mobilized offsite. Apparently, one of the tracks needs repair that is not practical to perform onsite. Decontamination with the steam cleaner is proving to be much more efficient than with Remtech's pressure washer.
3. Water levels continue to be significantly higher due to spring runoff and seasonal high tides. The silt fence and bio-bags were moved further inland near STA 8+82 in an attempt to minimize impacts to the fence. E & E recommended that Remtech remove silt fencing and bio-bags in areas along the beach where construction activities have ceased. Currently, no fencing or bio-bags have been moved other than those noted above.

Prepared By: E&E field staff

Oversight Engineers and Biological
Title: Monitor

Signature:

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ecology and environment, inc.

DAILY FIELD REPORT NO.: 36

Date: 5/30/2003 **Day:** Friday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: _____	Morning: 64 °F	Clean: _____
Part Cldy: X	Midday: 68 °F	Dusty: X
Overcast: _____	Afternoon: 76 °F	Muddy: _____
Rain: X		Other: _____
Fog: _____		
Snow: _____		
Other: _____		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	12	Mark Henry
2	Geo-Solutions, Inc.	1	Bruce George, slurry trench specialist
3	AINW	1	Todd Baker, Archeological monitor
4	Geo-Tech Explorations	3	Split-spoon sampling at bulk head
5	Pacific Fence	1	Fence B & D
6	Les Schwab Tires	1	Repaired loaders tires

VISITORS

Time In	Time Out	Name	Representing	Remarks
11:55	15:20	John Montgomery	E & E	Site visit
11:55	15:20	Kevin Parrett	ODEQ	Site visit
11:00	16:00	Ryan Whitchurch	E & E	Site visit
8:00	17:20	Mark Ochsner	E & E	Site visit
14:00	16:30	Steve Campbell	ODEQ	Site visit
14:00	16:30	Dick Pederson	ODEQ	Site visit
14:00	16:30	Alan Kiplutut	ODEQ	Site visit
14:00	16:30	Bill Dana	EPA	Site visit

MAJOR EQUIPMENT ON SITE

Manitowac 4000W Vicon Crane
Manitowac 3900W Vicon Crane
Gorman Rupp 55 Hp Slurry Pump
CAT 950 Loader
Komatsu-PC 1100LC Excavator w/ 80 ft Boom
Komatsu PC 220LC Excavator
2000 Gallon Water Truck

MATERIALS DELIVERED TO SITE

1 truck load of sheet pile; 5 pairs (80-ft)



ecology and environment, inc.

DAILY FIELD REPORT NO.: 36

Date: 5/30/2003 Day: Friday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Grove AMZ86XT Man-lift	
CAT 322B Tracked Excavator	
LULL 10K-54 Forklift	
Venturi Slurry Mixer	
I.C.E. Power Unit, Model 570	
I.C.E. Vibratory Driver, Model 4450	
CAT 426B (turbo) Backhoe	
John Deere 200C Excavator	
Whisperwatt 100	
John Deere 690 Excavator	
CAT D6 Tracked Dozer	
CAT D6 Tracked Dozer	

NONCONFORMANCES NOTED	WHO WAS NOTIFIED?
None	

SAFETY CONCERNS NOTED	WHO WAS NOTIFIED?
None	

RIVER CONDITIONS NOTED			
Morrison Bridge Gage:	9.97	ft. NGVD	Recorded at 1530 (low tide)
River Stage at Site:	9.87	ft. NGVD	
NAPL Sheen Observations:	None		
Construction Induced Runoff Observations:	None		
Photo Documentation:	None		
Other:			

WORK COMPLETED
1. Trench excavation continued today starting at STA 34+10 and stopping at STA 35+40. The required depth of 38-feet was achieved at STA 35+00. Backfilling continued throughout the day. At day's end, soundings indicated that the toe of the backfill was at STA 34+90. The backfill has reached the working platform surface at approximately STA 32+90. In-trench slurry samples were collected in the morning and afternoon. Samples were analyzed for viscosity, filtrate, density, and pH. Two S-B backfill mix samples were collected and field analyzed for density, slump, and grain size ("frying pan test") by Bruce George. Slump measurements were 4-in. in the morning and 4-in. in the afternoon, both within the required specification. 12 bags of bentonite were used in the S-B backfill mix and 1 bags of bentonite were used in the slurry pond.



ecology and environment, inc.

DAILY FIELD REPORT NO.:

36

Date: 5/30/2003

Day: Friday

Project Title: McCormick & Baxter Barrier Wall Construction

Client: ODEQ

E & E Project No.: 001688.OY02.25.01

2. Sheet Pile installation continued today from approximately STA 13+37 (staked) to approximately STA 13+90 (staked). No refusals were encountered today. By day's end, Remtech had set in place sheet pile pair #285 and had driven up to and including #283.

3. Geo-tech Explorations (with geological oversight from E&E's Mark Oschner) bored to approximately 90 feet below ground surface in close proximity to sheet piles #136 and #137. This boring is the first of three proposed as an attempt to explain the multiple refusals in the bulkhead area. No obvious obstruction was found during the first boring. However, densely packed sands and gravels were encountered at approximately 50-feet below ground surface.

NOTES/ISSUES

1. A leaky O-ring on the long stick excavator stopped excavation of the S-B trench at approximately 15:30. A small amount of hydraulic fluid was observed on the boom of the excavator. E&E estimates less than one gallon was released into the slurry and within the barrier wall. Additionally, the excavator was approximately 450-ft upland of the river. A service call was made and the excavator was repaired by the end of the day.

2. Water levels continue to be significantly higher due to spring runoff and seasonal high tides. The silt fence and bio-bags were moved further inland near STA 8+82 in an attempt to minimize impacts to the fence. E & E recommended that Remtech remove silt fencing and bio-bags in areas along the beach where construction activities have ceased. Predictive models for tide and the amount of water expected to be released from Bonneville Dam may indicate that water levels will be even higher this weekend and next week.

Prepared By:

E&E field staff

Oversight Engineers and Biological
Title: Monitor

Signature:

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DAILY FIELD REPORT NO.: 37

Date: 6/2/2003 **Day:** Monday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: <u>X (PM)</u>	Morning: <u>64 °F</u>	Clean: <u> </u>
Part Cldy: <u>X (AM)</u>	Midday: <u>74 °F</u>	Dusty: <u>X</u>
Overcast: <u> </u>	Afternoon: <u>83 °F</u>	Muddy: <u> </u>
Rain: <u> </u>		Other: <u> </u>
Fog: <u> </u>		
Snow: <u> </u>		
Other: <u> </u>		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	11	Mark Henry was not onsite today.
2	Geo-Solutions, Inc.	1	Bruce George, slurry trench specialist
3	AINW	1	Todd Baker, Archeological monitor
4	Geo-Tech Explorations	3	Split-spoon sampling at bulk head
5	Holocene Drilling	2	Drilling for verification samples (S-B wall)
6	Halton	1	Maintenance
7	Modern Machinery	1	Maintenance

VISITORS

Time In	Time Out	Name	Representing	Remarks
12:15	17:50	Ryan Whitchurch	E & E	Drilling oversight for Holocene Drilling
7:50	17:50	Mark Ochsner	E & E	Drilling oversight for Geo-Tech Drilling

MAJOR EQUIPMENT ON SITE	MATERIALS DELIVERED TO SITE
Manitowac 4000W Vicon Crane	No deliveries
Manitowac 3900W Vicon Crane	
Gorman Rupp 55 Hp Slurry Pump	
CAT 950 Loader	
Komatsu PC 1100LC Excavator w/ 80 ft Boom	
Komatsu PC 220LC Excavator	
2000 Gallon Water Truck	
Grove AMZ86XT Man-lift	
CAT 322B Tracked Excavator	
LULL 10K-54 Forklift	



ecology and environment, inc.

DAILY FIELD REPORT NO.: 37

Date: 6/2/2003 **Day:** Monday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Venturi Slurry Mixer	
I.C.E. Power Unit, Model 570	
I.C.E. Vibratory Driver, Model 4450	
CAT 426B (turbo) Backhoe	
John Deere 200C Excavator	
Whisperwatt 100	
John Deere 690 Excavator	
CAT D6 Tracked Dozer	
CAT D6 Tracked Dozer	

NONCONFORMANCES NOTED	WHO WAS NOTIFIED?
None	

SAFETY CONCERNS NOTED	WHO WAS NOTIFIED?
None	

RIVER CONDITIONS NOTED		
Morrison Bridge Gage:	10.48	ft. NGVD Recorded at 1730 (low tide)
River Stage at Site:	10.38	ft. NGVD
NAPL Sheen Observations:	None	
Construction Induced Runoff Observations:	None	
Photo Documentation:	None	
Other:		

WORK COMPLETED
1. Trench excavation continued today starting at STA 35+40 and stopping at STA 36+10. The required depth of 38-feet was achieved at STA 35+60. Backfilling continued throughout the day. At day's end, soundings indicated that the toe of the backfill was at STA 34+90. The backfill has reached the working platform surface at approximately STA 34+10. One In-trench slurry sample was collected in the afternoon. The sample was analyzed for viscosity, filtrate, density, and pH. A second sample was not collected because new slurry was not added to the trench in the morning (see Notes/Issues No. 1 for further explanation). Two S-B backfill mix samples were collected and field analyzed for density, slump, and grain size ("frying pan test") by Bruce George. Slump measurements were 4-in. in the morning and 4-in. in the afternoon, both within the required specification. 7 bags of bentonite were used in the S-B backfill mix and 0 bags of bentonite were used in the slurry pond.
2. Sheet Pile installation continued today from approximately STA 13+90 (staked) to approximately STA 14+00 (staked). Installation operations were curtailed today due to equipment problems. One of the cranes broke down.



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DAILY FIELD REPORT NO.: 37

Date: 6/2/2003 **Day:** Monday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

3. Verifications samples were collected by Holocene Drilling at STA. 16+00 using a hollow stem auger rig with a California modified split-spoon sampler. Samples were taken at 12, 36, and 60 feet below platform surface.

4. Geo-tech Explorations (with geological oversight from E&E's Mark Ochsner) bored until they tagged the Troutdale formation at 165-feet bgs in close proximity to sheet piles. No obvious obstruction was found during the boring. However, densely packed sands and gravels were encountered at approximately 50 to 60-feet bgs.

NOTES/ISSUES

1. A leaky O-ring on the under carriage of the long stick excavator stopped excavation of the S-B trench at approximately 09:00 until it could be serviced. At approximately 12:30, the excavator was repaired and excavation continued. At approximately 14:45, a different O-ring was observed to be leaking on the stick of the excavator. Excavation stopped and a service call was made. At approximately 16:00, the mechanic arrived and repaired the O-ring. However, the replaced O-ring was reported as a temporary repair. Apparently, the mounting plate used to attach the hoses to the stick had cracked and a new plate was needed to properly repair the excavator. A new plate is due to arrive around midday on June 3.

2. Water levels continue to be high due to spring runoff and seasonal high tides. Silt fencing was damaged in multiple places from floating woody debris. Remnant geotextile pieces litter the beach, and several bio-bags had floated off the shore. Remtech was previously informed and E&E, again, recommended that Remtech remove silt fencing and bio-bags in areas along the beach where construction activities have ceased. However, by day's end, bio-bags and silt fencing remained.

Prepared By: E&E field staff

**Oversight Engineers and Biological
Title:** Monitor

Signature:

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DAILY FIELD REPORT NO.:

38

Date: 6/3/2003

Day: Tuesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: <input checked="" type="checkbox"/>	Morning: 64 °F	Clean: <input type="checkbox"/>
Part Cldy: <input type="checkbox"/>	Midday: 75 °F	Dusty: <input checked="" type="checkbox"/>
Overcast: <input type="checkbox"/>	Afternoon: 83 °F	Muddy: <input type="checkbox"/>
Rain: <input type="checkbox"/>		Other: <input type="checkbox"/>
Fog: <input type="checkbox"/>		
Snow: <input type="checkbox"/>		
Other: <input type="checkbox"/>		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	11	Mark Henry was not onsite today.
2	Geo-Solutions, Inc.	1	Bruce George, slurry trench specialist
3	AINW	1	Todd Baker, Archeological monitor
4	Geo-Tech Explorations	2	Split-spoon sampling at bulk head
5	Holocene Drilling	2	Drilling for verification samples (S-B wall)
6	Halton	2	Maintenance
7	Modern Machinery	1	Maintenance
8	Cascade Phillips	1	Maintenance

VISITORS

Time In	Time Out	Name	Representing	Remarks
8:00	11:30	Ryan Whitchurch	E & E	Drilling oversight for Holocene Drilling
8:00	16:40	Mark Ochsner	E & E	Drilling oversight for Geo-Tech Drilling
14:20	16:15	Noreen Roster	E & E	Site visit
14:20	16:15	Sara McMahon	E & E	Site visit

MAJOR EQUIPMENT ON SITE

Manitowac 4000W Vicon Crane
Manitowac 3900W Vicon Crane
Gorman Rupp 55 Hp Slurry Pump
CAT 950 Loader
Komatsu PC 1100LC Excavator w/ 80 ft Boom
Komatsu PC 220LC Excavator
2000 Gallon Water Truck

MATERIALS DELIVERED TO SITE

No deliveries are expected through project completion.



ecology and environment, inc.

DAILY FIELD REPORT NO.: 38

Date: 6/3/2003 **Day:** Tuesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Grove AMZ86XT Man-lift

CAT 322B Tracked Excavator

LULL 10K-54 Forklift

Venturi Slurry Mixer

I.C.E. Power Unit, Model 570

I.C.E. Vibratory Driver, Model 4450

CAT 426B (turbo) Backhoe

John Deere 200C Excavator

John Deere 690 Excavator

CAT D6 Tracked Dozer

NONCONFORMANCES NOTED

WHO WAS NOTIFIED?

None

SAFETY CONCERNS NOTED

WHO WAS NOTIFIED?

None

RIVER CONDITIONS NOTED

Morrison Bridge Gage: 9.71 ft. NGVD Recorded at 1800 (low tide)

River Stage at Site: 9.61 ft. NGVD

NAPL Sheen Observations: None

Construction Induced Runoff Observations: None

Photo Documentation: None

Other:

WORK COMPLETED

1. Trench excavation continued today starting at STA 36+10 and stopping at STA 36+40 (excavation overlapped previous S-B wall by approximately 30-ft.), completing all slurry trench activities. Additionally, approximately 3-ft of S-B backfill was excavated from STA 36+40 to STA 37+00 to allow for additional backfill placement and to bring wall elevation to the required 25-ft NGVD. Backfilling continued throughout the day. At day's end, soundings indicated that the toe of the backfill had reached the leading wall of the trench. The backfill has reached the working platform surface at approximately STA 36+40. One in-trench slurry sample was collected in the morning. The sample was analyzed for viscosity, filtrate, density, and pH. A second sample was not collected because new slurry was not added to the trench in the morning. Two S-B backfill mix samples were collected and field analyzed for density, slump, and grain size ("frying pan test") by Bruce George. Slump measurements were 4.5-in. in the morning and 4-in. in the afternoon, both within the required specification. 15 bags of bentonite were used in the S-B backfill mix and 0 bags of bentonite were used in the slurry pond.



ecology and environment, inc.

DAILY FIELD REPORT NO.:

38

Date: 6/3/2003

Day: Tuesday

Project Title: McCormick & Baxter Barrier Wall Construction

Client: ODEQ

E & E Project No.: 001688.OY02.25.01

2. S-B wall protective cap construction was initiated today from STA 17+00 to STA 19+50. Mixing platform spoils (presumed to be contaminated) were placed first atop S-B wall to achieve maximum burial depth (greater than 4-ft. bgs). This initial lift was approximately 2-ft to 3-ft deep to allow compacting equipment to drive over the wall without displacing S-B backfill. No compaction was conducted today.
3. Sheet Pile installation continued today from approximately STA 14+00 (staked) to approximately STA 14+50 (staked). Remtech has used up all the 68-foot sheet pile pairs ordered and delivered to the site. Approximately 38-feet of the alignment still remains in which 68-foot pairs are appropriate. One or two extra were utilized due to the alignment change through the bulkhead area. Remtech ordered 80-foot pairs for the wall from STA. 14+50 to the S-B wall tie in 50 feet away. E&E recommended using 70-foot sheet pile for first 30 to 34 feet, then two 72-foot, and the rest 80-foot. This sequence saves driving expense and keeps as many 80 foot sheet pile for resale. The 80-foot sheet piles are considered to be more valuable because they can be divided into 40-foot sections.
4. Performance verifications samples were collected by Holocene Drilling at STA. 21+90 using a hollow stem auger rig with a California modified split-spoon sampler. Samples were taken at 6.5, 19, and 31.5 feet below platform surface.
5. Geo-tech Explorations (with geological oversight from E&E's Mark Oschner) completed the third and final boring today within the bulkhead/refusal area. No obvious obstruction was found during the boring. However, as observed in prior borings, densely packed sands and gravels were encountered at approximately 50 to 60-feet bgs. This depth is in the vicinity of the tip refusal.

NOTES/ISSUES

1. Water levels continue to be high due to spring runoff and seasonal high tides. Silt fencing was damaged in multiple places from floating woody debris. Remnant geotextile pieces litter the beach, and one bio-bag was observed in the river. Remtech was previously informed and E&E, again, recommended that Remtech remove silt fencing and bio-bags in areas along the beach where construction activities have ceased. Several bio-bags were moved upland. However, by day's end, bio-bags and silt fencing remained.

Prepared By:

E&E field staff

Oversight Engineers and Biological

Title: Monitor

Signature:

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DAILY FIELD REPORT NO.:

39

Date: 6/4/2003

Day: Wednesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: <u>X</u>	Morning: <u>64 °F</u>	Clean: <u></u>
Part ClDY: <u></u>	Midday: <u>75 °F</u>	Dusty: <u>X</u>
Overcast: <u></u>	Afternoon: <u>85 °F</u>	Muddy: <u></u>
Rain: <u></u>		Other: <u></u>
Fog: <u></u>		
Snow: <u></u>		
Other: <u></u>		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	10	Mark Henry
2	Geo-Solutions, Inc.	1	Bruce George, slurry trench specialist
3	Hertz	2	Maintenance
4	I.C.E.	2	Maintenance

VISITORS

Time In	Time Out	Name	Representing	Remarks
13:10	17:15	Kevin Parrett	ODEQ	Weekly Meeting
13:10	17:15	Steve Campbell	ODEQ	Weekly Meeting
12:50	16:25	Mark Ochsner	E & E	Weekly Meeting
10:55	16:25	Chad Nancarrow	E & E	Weekly Meeting

MAJOR EQUIPMENT ON SITE

MATERIALS DELIVERED TO SITE

Manitowac 4000W Vicon Crane	No deliveries are expected through project completion.
Manitowac 3900W Vicon Crane	
Gorman Rupp 55 Hp Slurry Pump	
CAT 950 Loader	
Komatsu PC 1100LC Excavator w/ 80 ft Boom	
Komatsu PC 220LC Excavator	
2000 Gallon Water Truck	
Grove AMZ86XT Man-lift	
CAT 322B Tracked Excavator	
LULL 10K-54 Forklift	
Venturi Slurry Mixer	



ecology and environment, inc.

DAILY FIELD REPORT NO.: 39

Date: 6/4/2003 Day: Wednesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

I.C.E. Power Unit, Model 570	
I.C.E. Vibratory Driver, Model 4450	
CAT 426B (turbo) Backhoe	
John Deere 200C Excavator	
Pressure washer/steam cleaner	
CAT D6 Tracked Dozer	
CAT CS-563D Vibratory Compactor	

NONCONFORMANCES NOTED	WHO WAS NOTIFIED?
None	

SAFETY CONCERNS NOTED	WHO WAS NOTIFIED?
None	

RIVER CONDITIONS NOTED			
Morrison Bridge Gage:	9.12	ft. NGVD	Recorded at 1900 (low tide)
River Stage at Site:	9.02	ft. NGVD	
NAPL Sheen Observations:	None		
Construction Induced Runoff Observations:	None		
Photo Documentation:	None		

Other:	

WORK COMPLETED

1. Protective cap construction proceeded with continued placement of the first lift over the S-B wall between STA 17+00 to STA 19+50. Visually contaminated soil was placed in the trench first followed by soil that did not appear contaminated. The first lift was approximately 2-ft. to 3-ft in depth. This depth was necessary to allow equipment to drive over the wall and to compact soil without creating a pumping effect to the S-B wall. Remtech initially used a dozer to spread and compact the lift followed several passes with a vibratory roller. A second lift was started between these two stations but not completed. Additionally, Remtech spread soil stockpiles from S-B wall mixing operations to aerate the soil and break clumps of clay in preparation for placement for cap construction.
2. S-B backfilling continued today from STA 36+40 to STA 37+00, completing S-B wall construction. The backfill placed brought this section of wall from approximately 22-ft NGVD to approximately 25-ft NGVD. No samples were collected because this backfill batch was mixed and tested the previous day. Remtech re-mixed and hydrated the batch prior to placement.
3. Sheet Pile installation continued today from approximately STA 14+50 (staked) to approximately STA 14+90(staked). No sheets were driven to grade today as the placed sheets are being utilized as a guide for matching up with S-B wall the tie in. Remtech hopes to complete the tie in by mid-day tomorrow.



ecology and environment, inc.

DAILY FIELD REPORT NO.: _____

39

Date: 6/4/2003

Day: Wednesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

NOTES/ISSUES

1. River levels are dropping and woody debris are no longer being displaced. Remtech has moved most of the silt fencing and bio-bags upland on the beach or to within the sheet pile wall. However, some sections of buried silt fence and geotextile remain. These sections are buried too deep for removal without assistance with equipment. E&E has informed Remtech that they will be required to extract all remnants.

Prepared By:

E&E field staff

Oversight Engineers and Biological

Title: Monitor

Signature:

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DAILY FIELD REPORT NO.: 40

Date: 6/5/2003 Day: Thursday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: <u>X</u>	Morning: <u>64 °F</u>	Clean: <u></u>
Part Cldy: <u></u>	Midday: <u>76 °F</u>	Dusty: <u>X</u>
Overcast: <u></u>	Afternoon: <u>96 °F</u>	Muddy: <u></u>
Rain: <u></u>		Other: <u></u>
Fog: <u></u>		
Snow: <u></u>		
Other: <u></u>		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	8	Mark Henry not onsite
2	Geo-Solutions, Inc.	1	Bruce George, slurry trench specialist, part day
3	DEA	2	Joe Jones, Ken Murto, surveying

VISITORS

Time In	Time Out	Name	Representing	Remarks
6:05	6:40	Ryan Witchurch	E & E	O&M

MAJOR EQUIPMENT ON SITE

Manitowac 4000W Vicon Crane
Manitowac 3900W Vicon Crane
CAT 950 Loader
Komatsu PC 1100LC Excavator w/ 80 ft Boom
Komatsu PC 220LC Excavator
2000 Gallon Water Truck
Grove AMZ86XT Man-lift
CAT 322B Tracked Excavator
LULL 10K-54 Forklift
I.C.E. Power Unit, Model 570
I.C.E. Vibratory Driver, Model 4450
CAT 426B (turbo) Backhoe
John Deere 200C Excavator
Pressure washer/steam cleaner
CAT D6 Tracked Dozer

MATERIALS DELIVERED TO SITE

No deliveries are expected through project completion.



ecology and environment, inc.

DAILY FIELD REPORT NO.: 40

Date: 6/5/2003 **Day:** Thursday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

CAT CS-563D Vibratory Compactor

NONCONFORMANCES NOTED

WHO WAS NOTIFIED?

None

SAFETY CONCERNS NOTED

WHO WAS NOTIFIED?

Too hot to deny the work crew easy access to drinking water in work area.

DEQ and field crew

RIVER CONDITIONS NOTED

Morrison Bridge Gage: * ft. NGVD Gage height not downloaded.

River Stage at Site: * ft. NGVD Gage height was not recorded.

NAPL Sheen Observations: None

Construction Induced Runoff Observations: None

Photo Documentation: None

Other:

WORK COMPLETED

1. Protective cap construction proceeded with continued placement of the first lift over the S-B wall between STA 15+80 to STA 17+00 and STA 19+50 to STA 22+50. This first lift was soil that appeared heavily stained and had a strong odor. Remtech used a dozer to spread and compact the lift. This lift has not been compacted with a roller. Remtech will need to add to the lift so the soil will support the load of the compactor without compromising the S-B wall. Additionally, Remtech placed the first lift of soil between STA 22+50 to STA 26+60 and slightly compacted this area with the dozer. Remtech will return to this area after placement and compaction is completed between STA 15+80 and STA 17+00.

2. Sheet Pile installation continued today from approximately STA 14+90 (staked) to approximately STA 15+00 (staked). Remtech has set into place the remaining sheets to the tie in and has set one sheet of the termination corner. The sheet pile placed at the transition point (start of S-B wall) and within the S-B wall are racking towards the wall. Remtech made several attempts at driving the transition sheet plumb by partially removing it, straightening it, and then driving it down again. Remtech believes that the sheet bridging the transition has too much differential in the material densities to drive straight down.

NOTES/ISSUES

None



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DAILY FIELD REPORT NO.: 40

Date: 6/5/2003

Day: Thursday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Prepared By: E&E field staff

Title: Monitor
Oversight Engineers and Biological

Signature:

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DAILY FIELD REPORT NO.: 41

Date: 6/9/2003 **Day:** Monday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: _____	Morning: 64 °F	Clean: _____
Part Cldy: X	Midday: 75 °F	Dusty: X
Overcast: _____	Afternoon: 75 °F	Muddy: _____
Rain: _____		Other: _____
Fog: _____		
Snow: _____		
Other: _____		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	8	Mark Henry is onsite
2	Halton Equipment Rental	1	Long boom PC1100 disassembly.
3	Modern Machinery	2	Equipment maintenance

VISITORS

Time In	Time Out	Name	Representing	Remarks
8:15	8:30	Scott Foster	Halton	Drop off D6 LGP
15:45	16:15	Scott Foster	Halton	Pick up D6 M

MAJOR EQUIPMENT ON SITE

Manitowac 4000W Vicon Crane
Manitowac 3900W Vicon Crane
CAT 950 Loader
Komatsu PC 1100LC Excavator w/ 80 ft Boom
2000 Gallon Water Truck
Grove AMZ86XT Man-lift
CAT 322B Tracked Excavator
LULL 10K-54 Forklift
I.C.E. Power Unit, Model 570
I.C.E. Vibratory Driver, Model 4450
CAT 426B (turbo) Backhoe
John Deere 200C Excavator
Pressure washer/steam cleaner
CAT D6 LPG Tracked Dozer
CAT CS-563D Vibratory Compactor

MATERIALS DELIVERED TO SITE

No deliveries are expected through project completion.



ecology and environment, inc.

DAILY FIELD REPORT NO.: 41

Date: 6/9/2003 **Day:** Monday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

NONCONFORMANCES NOTED

WHO WAS NOTIFIED?

None

SAFETY CONCERNS NOTED

WHO WAS NOTIFIED?

Hazardous situation with the crane, see Note 1. below

E&E's project manager

RIVER CONDITIONS NOTED

Morrison Bridge Gage: 8.40 ft. NGVD Recorded at 1130 (low tide)

River Stage at Site: 8.30 ft. NGVD

NAPL Sheen Observations: None

Construction Induced Runoff Observations: None

Photo Documentation: None

Other:

WORK COMPLETED

1. Protective cap construction continued with placement of trench spoils over the S-B wall between STA 15+80 to STA 22+50. Remtech used a dozer to spread and initially compact the soil, followed by additional compaction with a vibratory roller. Additionally, Remtech placed soil from STA 26+60 to STA 33+10 with an excavator. This lift will be compacted the crew completes cap construction in the previously mentioned areas. Lastly, Remtech continued to spread out unused S-B backfill to facilitate drying and ease placement as part of cap construction.

2. Sheet pile installation was halted early this afternoon due to equipment problems and a hazardous situation (See Note 1.). The situation occurred during an attempt to straighten (make plumb) the last three sheets of the tie-in to the S-B wall. Remtech is encountering a racking (or fanning out) of the top portion of the wall at the transition point from undisturbed soils to the S-B backfill. The driving conditions appear to be causing the problem. Remtech has raised a few pairs back from the transition to assist with alignment.

NOTES/ISSUES

1. During sheet pile installation operations today, the hammer slipped off a sheet causing the crane to rock back and forth. Initially, no obvious side effects were observed, however, one of Remtech's pile drivers noticed the cable which raises and lowers the boom was severely frayed. Multiple bundles appeared damaged and the condition was considered to be extremely hazardous. Sheet pile operations were halted with the hammer still attached. After assessing the situation and contacting the crane maintenance service, who will not be onsite until morning, Remtech decided to stabilize the situation as much as possible with what was available. They proceeded to wrap cable, approximately 3/4" diameter, around the upper and lower sheave rack several times and secured it with cable clamps.



ecology and environment, inc.

DAILY FIELD REPORT NO.: 41

Date: 6/9/2003

Day: Monday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Prepared By: E&E field staff

Title: Oversight Engineers and Biological

Signature:

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DAILY FIELD REPORT NO.: 42

Date: 6/10/2003 **Day:** Tuesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: _____	Morning: 64 °F	Clean: _____
Part Cldy: X	Midday: 75 °F	Dusty: X
Overcast: _____	Afternoon: 75 °F	Muddy: _____
Rain: _____		Other: _____
Fog: _____		
Snow: _____		
Other: _____		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	8	Mark Henry is not onsite
2	Halton Equipment Rental	2	Equipment maintenance
3	Modern Machinery	2	Long boom PC1100 disassembly.

VISITORS

Time In	Time Out	Name	Representing	Remarks
14:00	15:00	Jack Robertson	River City Disposal	Dumpster pick up (Remtech's).
8:50	10:20	Dave Jaspersen	Halton	Maintenance of loader.
8:00	17:30	Wayne Culver	Crane Field Services	Cable replacement
14:35	14:55	Dale Shatto	Cascade Phillips	

MAJOR EQUIPMENT ON SITE

MATERIALS DELIVERED TO SITE

Manitowac 4000W Vicon Crane	One spool of cable, details not available.
Manitowac 3900W Vicon Crane	
CAT 950 Loader	
Komatsu PC 1100LC Excavator w/ 80 ft Boom	
2000 Gallon Water Truck	
Grove AMZ86XT Man-lift	
CAT 322B Tracked Excavator	
LULL 10K-54 Forklift	
I.C.E. Power Unit, Model 570	
I.C.E. Vibratory Driver, Model 4450	
CAT 426B (turbo) Backhoe	
John Deere 200C Excavator	



ecology and environment, inc.

DAILY FIELD REPORT NO.: 42

Date: 6/10/2003

Day: Tuesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Pressure washer/steam cleaner

CAT D6 LPG Tracked Dozer

CAT CS-563D Vibratory Compactor

NONCONFORMANCES NOTED

WHO WAS NOTIFIED?

None

SAFETY CONCERNS NOTED

WHO WAS NOTIFIED?

Hazardous situation with the crane, see 06/09/03 Daily Report.

E&E's project manager and project engineer

RIVER CONDITIONS NOTED

Morrison Bridge Gage: 8.11 ft. NGVD Recorded at 1130 (low tide)

River Stage at Site: 8.01 ft. NGVD

NAPL Sheen Observations: None

Construction Induced Runoff Observations: None

Photo Documentation: None

Other:

WORK COMPLETED

1. Remtech continued cap construction primarily from STA 17+00 to STA 20+00. Additional lifts were added to this area to bring the cap closer to existing grade. Additionally, Remtech started relocating backfill stockpiles to a staging area near STA 16+00 in preparation for cap construction when sheet pile is completed in this area. Cap backfill placed from STA 26+60 to STA 32+50 was graded out with the Dozer. Lastly, cap backfill was placed in trench from STA 33+10 to STA 33+70 but not compacted.

2. No sheet pile installation occurred today. Remtech, with assistance from Manitowoc Field repair services, replaced the frayed cable on the crane utilized for sheet pile driving. Temporary securing harnesses were made from 1-inch diameter cable wrapped three times around the upper and lower sheave racks and then secured with 5 cable clamps. After securing, the hammer was removed, the crane's boom was rotated towards the east (away from power cables and train tracks), and then lowered until the harnesses became taught. Once taught, the load was removed from the frayed cable, and new cable was threaded.

NOTES/ISSUES

None



ecology and environment, inc.

DAILY FIELD REPORT NO.: 42

Date: 6/10/2003 **Day:** Tuesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Prepared By: E&E field staff

Title: Monitor
Oversight Engineers and Biological

Signature:

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DAILY FIELD REPORT NO.: 43

Date: 6/11/2003 **Day:** Wednesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: _____	Morning: 64 °F	Clean: _____
Part Cldy: X	Midday: 75 °F	Dusty: X
Overcast: _____	Afternoon: 75 °F	Muddy: _____
Rain: _____		Other: _____
Fog: _____		
Snow: _____		
Other: _____		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	8	Mark Henry is onsite
2	Modern Machinery	2	Long boom PC1100 disassembly.

VISITORS

Time In	Time Out	Name	Representing	Remarks
13:00	16:45	Kevin Parrett	ODEQ	Weekly meeting
13:00	16:45	Steve Campbell	ODEQ	Weekly meeting
13:00	16:45	John Montgomery	E & E	Weekly meeting
10:30	16:45	Chad Nancarrow	E & E	Weekly meeting
15:00	18:40	Hugo Pizzaro	Manitowoc	Crane Repair

MAJOR EQUIPMENT ON SITE

MATERIALS DELIVERED TO SITE

Manitowac 4000W Vicon Crane	No more project related material deliveries expected.
Manitowac 3900W Vicon Crane	
CAT 950 Loader	
Komatsu PC 1100LC Excavator (80 ft. boom off site)	
2000 Gallon Water Truck	
Grove AMZ86XT Man-lift	
CAT 322B Tracked Excavator	
LULL 10K-54 Forklift	
I.C.E. Power Unit, Model 570	
I.C.E. Vibratory Driver, Model 4450	
CAT 426B (turbo) Backhoe	
John Deere 200C Excavator	
Pressure washer/steam cleaner	



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DAILY FIELD REPORT NO.: 43

Date: 6/11/2003

Day: Wednesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

CAT D6 LPG Tracked Dozer

CAT CS-563D Vibratory Compactor

NONCONFORMANCES NOTED

WHO WAS NOTIFIED?

None

SAFETY CONCERNS NOTED

WHO WAS NOTIFIED?

None

RIVER CONDITIONS NOTED

Morrison Bridge Gage: 8.85 ft. NGVD Recorded at 1330 (low tide)

River Stage at Site: 8.75 ft. NGVD

NAPL Sheen Observations: None

Construction Induced Runoff Observations: None

Photo Documentation: None

Other:

WORK COMPLETED

1. Remtech continued cap construction focusing on the areas between STA 31+00 to STA 37+60. Cap construction has started on all areas of the S-B wall except from STA 15+00 to STA 15+80 and from STA 37+60 to 38+67. These areas cannot be completed until the sheet pile tie-in to the S-B wall is complete. The cap construction method remains unchanged (dozer pushes soil and compacts it, followed by additional compaction with a vibratory roller). Static rolling (compaction without vibration) was used at times today to reduce or avoid pumping (displacement of S-B backfill as a result driving equipment over it) of the S-B wall.

2. No sheet pile installation occurred today. Remtech performed an inspection on the sheet pile dedicated crane. During the inspection, cracks were found in a non-structural member of the boom. Although non-structural, Remtech mobilized a specialized (certified) crane boom welder. Mobilization and repair took all day and into the evening. The crane was operational by day's end.

NOTES/ISSUES

None



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DAILY FIELD REPORT NO.: 43

Date: 6/11/2003

Day: Wednesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Prepared By: E&E field staff

Title: Monitor
Oversight Engineers and Biological

Signature:

A handwritten signature in black ink, appearing to read 'Mh Lee'.

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DAILY FIELD REPORT NO.: 44

Date: 6/12/2003 **Day:** Thursday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: _____	Morning: 64 °F	Clean: _____
Part Cldy: X	Midday: 75 °F	Dusty: X
Overcast: _____	Afternoon: 75 °F	Muddy: _____
Rain: _____		Other: _____
Fog: _____		
Snow: _____		
Other: _____		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	8	Mark Henry was not on-site.

VISITORS

Time In	Time Out	Name	Representing	Remarks

MAJOR EQUIPMENT ON SITE

Manitowac 4000W Vicon Crane
Manitowac 3900W Vicon Crane
CAT 950 Loader
2000 Gallon Water Truck
Grove AMZ86XT Man-lift
CAT 322B Tracked Excavator
LULL 10K-54 Forklift
I.C.E. Power Unit, Model 570
I.C.E. Vibratory Driver, Model 4450
CAT 426B (turbo) Backhoe
John Deere 200C Excavator
Pressure washer/steam cleaner
CAT D6 LPG Tracked Dozer
CAT CS-563D Vibratory Compactor

MATERIALS DELIVERED TO SITE

No more project related material deliveries expected.

NONCONFORMANCES NOTED

None

WHO WAS NOTIFIED?



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DAILY FIELD REPORT NO.: 44

Date: 6/12/2003

Day: Thursday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

SAFETY CONCERNS NOTED

WHO WAS NOTIFIED?

None

RIVER CONDITIONS NOTED

Morrison Bridge Gage: 9.54 ft. NGVD Recorded at 14:00 (low tide)

River Stage at Site: 9.44 ft. NGVD

NAPL Sheen Observations: None

Construction Induced Runoff Observations: None

Photo Documentation: None

Other:

WORK COMPLETED

1. Remtech continued cap construction focusing on the areas between STA 31+00 and STA 38+50. The cap construction method remains unchanged (the dozer pushes soil and compacts it, followed by additional compaction with a vibratory roller).

2. The crane and sheet pile installation equipment were operational today. Remtech attempted to correct the out-of-plumb sheets near the tie in at STA 15+03. To assist in the attempt, Remtech modified their installation method in this area by driving sheets to depth and then threading the next one. Historically, Remtech left 4-5 sheets approximately 20-30 feet above design elevation, prior to threading the next pair, to keep the alignment. However, the attempt was thwarted by one sheet pile that met with refusal at approximately -20 feet NGVD. At day's end, Remtech was three pairs away from the transition. E&E indicated to Remtech that it was imperative that all the sheets meet design tip elevation in this critical area.

3. Remtech constructed a working platform for continuation of the sheetpile wall from STA 2+50 to STA 1+52. Additionally, the bank from STA 1+52 to STA 1+00 was graded to allow "stepping" of the sheetpile wall up the bank to the sheetpile/S-B wall transition point.

NOTES/ISSUES

None

Prepared By:

E&E field staff

Oversight Engineers and Biological

Title: Monitor

Signature:



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DAILY FIELD REPORT NO.: 45

Date: 6/16/2003 **Day:** Monday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: <u>X</u>	Morning: <u>64 °F</u>	Clean: <u> </u>
Part Cldy: <u> </u>	Midday: <u>75 °F</u>	Dusty: <u>X</u>
Overcast: <u> </u>	Afternoon: <u>86 °F</u>	Muddy: <u> </u>
Rain: <u> </u>		Other: <u> </u>
Fog: <u> </u>		
Snow: <u> </u>		
Other: <u> </u>		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	8	Mark Henry was on-site.

VISITORS

Time In	Time Out	Name	Representing	Remarks
8:30	11:00	Kevin Parrett	DEQ	Site Visit
9:30	11:00	Steve Campbell	DEQ	Site Visit
16:10	18:00	Kevin Parrett	DEQ	Site Visit
16:10	18:00	Helen Hillman	NOAA	Site Visit
16:10	18:00	Rene Fuentes	EPA	Site Visit
14:45	15:10	Jim Osborn	ABS	Vendor visiting Remtech

MAJOR EQUIPMENT ON SITE

Manitowac 4000W Vicon Crane
Manitowac 3900W Vicon Crane
CAT 950 Loader
2000 Gallon Water Truck
Grove AMZ86XT Man-lift
CAT 322B Tracked Excavator
LULL 10K-54 Forklift
I.C.E. Power Unit, Model 570
I.C.E. Vibratory Driver, Model 4450
CAT 426B (turbo) Backhoe
John Deere 200C Excavator
Pressure washer/steam cleaner
CAT D6 LPG Tracked Dozer

MATERIALS DELIVERED TO SITE

No more project related material deliveries expected.



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DAILY FIELD REPORT NO.: 45

Date: 6/16/2003 **Day:** Monday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

CAT CS-563D Vibratory Compactor

NONCONFORMANCES NOTED

WHO WAS NOTIFIED?

None

SAFETY CONCERNS NOTED

WHO WAS NOTIFIED?

None

RIVER CONDITIONS NOTED

Morrison Bridge Gage: 7.41 ft. NGVD Recorded at 17:30 (low tide)

River Stage at Site: 7.31 ft. NGVD

NAPL Sheen Observations: None

Construction Induced Runoff Observations: None

Photo Documentation: None

Other:

WORK COMPLETED

1. Remtech continued cap construction focusing on the areas between STA 28+00 and STA 38+50. The cap construction method remains unchanged (the dozer pushes soil and compacts it, followed by additional compaction with a vibratory roller). Additionally, approximately 30-40 CY of stockpiled soil (3 or 4 truck loads) were relocated from an area NE of the FWDA to approximately STA 29+00 and graded out as part of the cap construction. The soil did not appear stained or have a noticeable odor.

2. Sheet pile installation continued today under a change order condition. Remtech attempted to bypass a refusal area encountered for one sheet (Alignment Alternative No. 1). However, sheet pile equipment failure problems continued when a hydraulic line to the hammer burst about 15-feet above the ground. Approximately 10 gallons of vegetable oil based hydraulic fluid was released. Most of the released fluid landed within the sheet pile wall and a slight amount sprayed outside the wall. Remtech used 5-gallon buckets as containment during repair. Absorbent booms and pads were used to wipe the lines. The affected soils outside the wall were transported to within the wall. Operations were down for 3-hours. Remtech will attempt wall Alignment Alternative No. 2 on Tuesday. Remtech and E&E estimated the linear footage for Alternative No. 1 would have been 24 feet, if installed.

3. Remtech filled a 30 CY dumpster with debris (mostly palettes from bentonite bags).

4. Remtech bailed out the remaining unused fresh slurry from the slurry pond. A small soil berm was constructed to the SE of the pond and slurry was placed within the bermed area. After completely bailing the slurry, Remtech began backfilling the pond with soil stockpiled around the perimeter of the pond. At day's end, all the stockpiled soil was placed in the pond but the pond was not completely backfilled. Remtech will place excess Wilkins clay and possibly other borrow material (if necessary) to completely backfill the slurry pond.



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DAILY FIELD REPORT NO.:

45

Date: 6/16/2003

Day: Monday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

NOTES/ISSUES

1. During their site visit, DEQ, NOAA, and EPA observed NAPL globules rising from the river bottom that created a sheen on the river surface. The sheen was approximately 50 yards southeast of the end of the bulkhead. The sheen was observed at approximately low tide (approximately 17:30) and did not appear to be construction related because site operations had stopped for the day.

Prepared By:

E&E field staff

Oversight Engineers and Biological

Title: Monitor

Signature:

M. H. Caen

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DAILY FIELD REPORT NO.: 46

Date: 6/17/2003

Day: Tuesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: <u>X</u>	Morning: <u>64 °F</u>	Clean: <u> </u>
Part Cldy: <u> </u>	Midday: <u>75 °F</u>	Dusty: <u>X</u>
Overcast: <u> </u>	Afternoon: <u>89 °F</u>	Muddy: <u> </u>
Rain: <u> </u>		Other: <u> </u>
Fog: <u> </u>		
Snow: <u> </u>		
Other: <u> </u>		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	8	Mark Henry was not on-site.
2	David Evans and Associates	2	Stake drilling locations and wall crossings.

VISITORS

Time In	Time Out	Name	Representing	Remarks
8:00	18:00	Kevin Parrett	DEQ	Site Visit

MAJOR EQUIPMENT ON SITE	MATERIALS DELIVERED TO SITE
Manitowac 4000W Vicon Crane	No more project related material deliveries expected.
Manitowac 3900W Vicon Crane	
CAT 950 Loader	
2000 Gallon Water Truck	
Grove AMZ86XT Man-lift	
CAT 322B Tracked Excavator	
LULL 10K-54 Forklift	
I.C.E. Power Unit, Model 570	
I.C.E. Vibratory Driver, Model 4450	
CAT 426B (turbo) Backhoe	
John Deere 200C Excavator	
Pressure washer/steam cleaner	
CAT D6 LPG Tracked Dozer	



ecology and environment, inc.

DAILY FIELD REPORT NO.: 46

Date: 6/17/2003 Day: Tuesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

CAT CS-563D Vibratory Compactor

NONCONFORMANCES NOTED

WHO WAS NOTIFIED?

None

SAFETY CONCERNS NOTED

WHO WAS NOTIFIED?

None

RIVER CONDITIONS NOTED

Morrison Bridge Gage: 8.02 ft. NGVD Recorded at 18:30 (low tide)

River Stage at Site: 7.92 ft. NGVD

NAPL Sheen Observations: None

Construction Induced Runoff Observations: None

Photo Documentation: None

Other:

WORK COMPLETED

1. Remtech used a dozer to blade out excess fresh slurry that was bailed from the pond the previous day to allow it to dry. Remtech continued to backfill the pond with leftover surface soils from S-B mixing areas NW of the shop building and stockpiled Wilkins clay.

2. Remtech attempted Alignment Change Alternative No. 2 in an attempt to bypass refusal in the FWDA near STA 15+00. This effort was conducted under a change order condition. Remtech drove five pairs of sheetpile according to the Alignment No. 2. The fifth pair (the last pair set on this day) met refusal at a height of approximately 30-feet from required depth. This refusal depth is approximately the same as observed during the previous attempts in this area.

3. Remtech consolidated remaining HDPE slurry pipe into an area SE of the trailers. They cut the pipe into 15-ft to 20-ft sections and placed the sections onto a flatbed trailer.

4. Remtech started decontaminating the forklift for demobilization.

NOTES/ISSUES

1. A coyote was observed on-site, near the wood debris pile located south of the FWDA. No pups were observed. E&E suspects the coyote was using this debris pile as temporary shelter.



ecology and environment, inc.

DAILY FIELD REPORT NO.: 46

Date: 6/17/2003 **Day:** Tuesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Prepared By: E&E field staff

Title: Monitor
Oversight Engineers and Biological

Signature:

Mike Laen

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DAILY FIELD REPORT NO.: 47

Date: 6/18/2003 Day: Wednesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: _____	Morning: 60 °F	Clean: _____
Part Cldy: X	Midday: 64 °F	Dusty: X
Overcast: _____	Afternoon: 69 °F	Muddy: _____
Rain: AM drizzle		Other: _____
Fog: _____		
Snow: _____		
Other: _____		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	9	Mark Henry was on-site.
2	Holocene Drilling	2	Drilling for S-B wall performance verification samples.

VISITORS

Time In	Time Out	Name	Representing	Remarks
8:00	17:30	Kevin Parrett	DEQ	Site Visit
12:30	16:00	Steve Campbell	DEQ	Meeting
9:40	17:15	Chad Nancarrow	E&E	Meeting
1:15	17:00	John Montgomery	E&E	Meeting
11:15	17:40	Mark Ochsner	E&E	Drilling Oversight

MAJOR EQUIPMENT ON SITE

MATERIALS DELIVERED TO SITE

Manitowac 4000W Vicon Crane	No more project related material deliveries expected.
Manitowac 3900W Vicon Crane	
CAT 950 Loader	
2000 Gallon Water Truck	
Grove AMZ86XT Man-lift	
CAT 322B Tracked Excavator	
LULL 10K-54 Forklift	
I.C.E. Power Unit, Model 570	
I.C.E. Vibratory Driver, Model 4450	
CAT 426B (turbo) Backhoe	
John Deere 200C Excavator	
Pressure washer/steam cleaner	



ecology and environment, inc.

DAILY FIELD REPORT NO.: 47

Date: 6/18/2003 **Day:** Wednesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

CAT D6 LPG Tracked Dozer

CAT CS-563D Vibratory Compactor

NONCONFORMANCES NOTED

WHO WAS NOTIFIED?

None

SAFETY CONCERNS NOTED

WHO WAS NOTIFIED?

None

RIVER CONDITIONS NOTED

Morrison Bridge Gage: 7.76 ft. NGVD Recorded at 19:00 (low tide)

River Stage at Site: 7.66 ft. NGVD

NAPL Sheen Observations: None

Construction Induced Runoff Observations: None

Photo Documentation: None

Other:

WORK COMPLETED

1. Remtech began cleaning up site of project related debris and placing debris in stockpiles. Additionally, Remtech segregated stockpiled trees into large diameter (>6-inches) and small diameter (<6-inches) stockpiles. Also, they pulled out other non-tree debris within tree stockpiles and placed into a separate stockpile.

2. Remtech continued driving sheetpile in FWDA near STA 15+00 using the re-alignment with right angles (Alternative No. 2). Initially, Remtech potholed to locate the lead-in trench and determined that the last placed sheet of Alternative No. 2 was a minimum of 6-inches within the lead-in trench. They spent the remainder of the day driving the sheetpile pair partially within the lead-in trench and the single sheetpile just prior to the lead-in trench (next to the pair within the lead-in trench). Remtech was able to drive the single sheet approximately 6-feet from design depth, when Kevin Parrett (DEQ) indicated that this was sufficient. Lastly, Remtech pulled one sheetpile from the pair within the lead-in trench because the interlock would not match for threading an omega corner. On Thursday, they will continue to weave sheetpile on this corner and attempt to drive the remaining piles to cross the S-B wall and key into undisturbed earth. See Notes/Issues, below, for additional information.

NOTES/ISSUES

1. While attempting to pull up a sheetpile SW of the last single sheet meeting refusal at the north end tie-in, the hammer broke the sheet, severely jarring the crane. Later in the day, the crane cables appeared frayed. Remtech took this crane (4000W Vicon) out of service and mobilized the 3900W Vicon to continue driving sheetpile. Additionally, the single sheetpile meeting refusal was broken approximately 4 times by the hammer. E&E estimates that Remtech cut approximately 2-feet off the top of the sheet. Lastly, Remtech ran out of oxygen for the cutting torch at approximately 15:15. A new oxygen bottle was delivered at approximately 16:30.



Ecology and environment, inc.

DAILY FIELD REPORT NO.: 47

Date: 6/18/2003

Day: Wednesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Prepared By: E&E field staff

Title: Monitor
Oversight Engineers and Biological

Signature:

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DAILY FIELD REPORT NO.: 48

Date: 6/19/2003

Day: Thursday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: _____	Morning: 55 °F	Clean: _____
Part Cldy: X	Midday: 58 °F	Dusty: X
Overcast: _____	Afternoon: 62 °F	Muddy: _____
Rain: _____		Other: _____
Fog: _____		
Snow: _____		
Other: _____		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	8	Mark Henry was not on-site.
2	Holocene Drilling (on-site for 1-hour)	2	Drilling for S-B wall performance samples.

VISITORS

Time In	Time Out	Name	Representing	Remarks
9:35	10:30	Mark Ochsner	E&E	Dropped off pipe for inclinometer

MAJOR EQUIPMENT ON SITE

MATERIALS DELIVERED TO SITE

Manitowac 4000W Vicon Crane	No more project related material deliveries expected.
Manitowac 3900W Vicon Crane	
CAT 950 Loader	
2000 Gallon Water Truck	
Grove AMZ86XT Man-lift	
CAT 322B Tracked Excavator	
I.C.E. Power Unit, Model 570	
I.C.E. Vibratory Driver, Model 4450	
CAT 426B (turbo) Backhoe	
John Deere 200C Excavator	
Pressure washer/steam cleaner	
CAT D6 LPG Tracked Dozer	
CAT CS-563D Vibratory Compactor	

NONCONFORMANCES NOTED

WHO WAS NOTIFIED?

None



ecology and environment, inc.

DAILY FIELD REPORT NO.: 48

Date: 6/19/2003 **Day:** Thursday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

SAFETY CONCERNS NOTED

WHO WAS NOTIFIED?

None

RIVER CONDITIONS NOTED

Morrison Bridge Gage: 7.64 ft. NGVD Recorded at 20:00 (low tide)

River Stage at Site: 7.54 ft. NGVD

NAPL Sheen Observations: None

Construction Induced Runoff Observations: None

Photo Documentation: Yes. See Notes/Issues below

Other:

WORK COMPLETED

1. Remtech continued site clean up by gathering and stockpiling debris.

2. Remtech continued driving sheetpile in FWDA near STA 15+00 using the re-alignment with right angles (Alternative No. 2). Remtech weaved an omega corner on the sheetpile just south of the lead-in trench and weaved 4 pair of sheetpile through the lead-in trench and approximately 3-feet beyond the lead-in trench into undisturbed earth. All sheetpiles within the lead-in trench were driven to required depth. The pair north of the lead-in that keyed into undisturbed earth was driven approximately 50-feet bgs. Approximately 30-feet of this pair were cut off and weaved onto the pair driven to 50-feet bgs. The 30-feet long pair was then driven so that the tip elevation is approximately -5 feet NGVD, resulting in a total key length of 7 linear feet into undisturbed earth.

3. Additionally, Remtech removed unused or damaged sheetpile from the S-B trench (from previous attempts per plan alignment which met with refusal). Lastly, Remtech continued attempts to drive the sheetpiles meeting refusal along Alternative No. 2 on the north and south side of the omega corner, just prior to entering the lead-in trench. The sheetpile south of the omega corner was driven for approximately 4-minutes until the top broke with no movement. The sheetpile to the north was driven for approximately 9-minutes until the top broke with movement of approximately 4-feet.

NOTES/ISSUES

1. NAPL globules rising from the river bottom, followed by a sheen on the river surface was observed approximately 50 yards SE of the bulkhead. E&E took digital photographs to document the sheen. The globules did not appear construction related as they were observed approximately 630 feet from sheetpile activities and approximately 2-hours from the last attempt to drive sheetpile. The tide was nearing its lowest point of the day during this observation.



ecology and environment, inc.

DAILY FIELD REPORT NO.: 48

Date: 6/19/2003

Day: Thursday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Prepared By: E&E field staff

Title: Monitor
Oversight Engineers and Biological

Signature:

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intentionally left blank.**



ecology and environment, inc.

DAILY FIELD REPORT NO.: 49

Date: 6/23/2003

Day: Monday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: _____	Morning: 55 °F	Clean: _____
Part Clcy: X	Midday: 58 °F	Dusty: X
Overcast: _____	Afternoon: 62 °F	Muddy: _____
Rain: _____		Other: _____
Fog: _____		
Snow: _____		
Other: _____		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks

VISITORS

Time In	Time Out	Name	Representing	Remarks

MAJOR EQUIPMENT ON SITE

Manitowac 4000W Vicon Crane
Manitowac 3900W Vicon Crane
CAT 950 Loader
2000 Gallon Water Truck
Grove AMZ86XT Man-lift
CAT 322B Tracked Excavator
I.C.E. Power Unit, Model 570
I.C.E. Vibratory Driver, Model 4450
CAT 426B (turbo) Backhoe
John Deere 200C Excavator
Pressure washer/steam cleaner
CAT D6 LPG Tracked Dozer
CAT CS-563D Vibratory Compactor

MATERIALS DELIVERED TO SITE

No more project related material deliveries expected.

NONCONFORMANCES NOTED

None

WHO WAS NOTIFIED?



ecology and environment, inc.

DAILY FIELD REPORT NO.: 49

Date: 6/23/2003

Day: Monday

Project Title: McCormick & Baxter Barrier Wall Construction

Client: ODEQ

E & E Project No.: 001688.OY02.25.01

SAFETY CONCERNS NOTED

WHO WAS NOTIFIED?

None

RIVER CONDITIONS NOTED

Morrison Bridge Gage: 4.88 ft. NGVD Recorded at 11:00 (low tide)

River Stage at Site: 4.78 ft. NGVD

NAPL Sheen Observations: None

Construction Induced Runoff Observations: None

Photo Documentation: None

Other:

WORK COMPLETED

1. Remtech completed the S-B wall cap and grading near STA 15+03 today.

2. Remtech completed sheet pile driving efforts in the FWDA near STA 15+00 and moved the sheet pile equipment to southern end (STA 2+50). Prior to moving, two more attempts were made on sheet pile number 313, the sheet pile being driven when a hydraulic fitting broke on Thursday afternoon. The sheet pile advanced approximately 2 feet on the first attempt before braking and approximately 6 inches on the second attempt. The sheet pile tip elevation is at approximately -32.5 feet NGVD (approximately 13.75 feet from design depth). After setting up on the southern end, eleven sheet pile pairs were set in place by days end.

3. As described in change order number 6, Remtech started and completed the construction of an access and staging road for the dump truck and excavator in preparation for excavation of the interceptor trench. Remtech also started the excavation of a project debris disposal pit northwest of the existing concrete disposal site.

NOTES/ISSUES

Time and equipment spent on additional tasks:

Cat trackhoe and operator for access road construction and treated wood debris disposal (1300 hrs - 1730 hrs or 4.5 hrs).

Dozer and operator for access road construction (1300 hrs - 1540 hrs or 2.7 hrs). John Deere trackhoe and dump truck used by one operator to haul 5 loads of wood debris to disposal pit (trackhoe used intermittently by sheet pile crew) (1540 hrs - 1650 hrs). Dozer and operator pushing treated wood debris (1650 hrs - 1730 hrs).

Prepared By: E&E field staff

Title: Oversight Engineers

Signature:



ecology and environment, inc.

DAILY FIELD REPORT NO.: 50

Date: 6/24/2003 Day: Tuesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: _____	Morning: 55 °F	Clean: _____
Part Cldy: X	Midday: 58 °F	Dusty: X
Overcast: _____	Afternoon: 62 °F	Muddy: _____
Rain: _____		Other: _____
Fog: _____		
Snow: _____		
Other: _____		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks

VISITORS

Time In	Time Out	Name	Representing	Remarks
8:40	10:30	Steve Campbell	ODEQ	Site visit

MAJOR EQUIPMENT ON SITE

Manitowac 4000W Vicon Crane
Manitowac 3900W Vicon Crane
CAT 950 Loader
2000 Gallon Water Truck
Grove AMZ86XT Man-lift
CAT 322B Tracked Excavator
I.C.E. Power Unit, Model 570
I.C.E. Vibratory Driver, Model 4450
CAT 426B (turbo) Backhoe
John Deere 200C Excavator
Pressure washer/steam cleaner
CAT D6 LPG Tracked Dozer
CAT CS-563D Vibratory Compactor

MATERIALS DELIVERED TO SITE

No more project related material deliveries expected.

NONCONFORMANCES NOTED

None

WHO WAS NOTIFIED?



ecology and environment, inc.

DAILY FIELD REPORT NO.: 50

Date: 6/24/2003 **Day:** Tuesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

SAFETY CONCERNS NOTED

WHO WAS NOTIFIED?

None

RIVER CONDITIONS NOTED

Morrison Bridge Gage: 4.62 ft. NGVD Recorded at 12:00 (low tide)

River Stage at Site: 4.52 ft. NGVD

NAPL Sheen Observations: None

Construction Induced Runoff Observations: None

Photo Documentation: None

Other:

WORK COMPLETED

1. Remtech continued sheet pile driving operations starting at STA 20+06 and ending at STA 1+46. Remtech set 15 sheet pile pairs in place and drove 25 pairs to depth making it the most productive day of the project.

2. Remtech began the excavation of the interceptor trench spoils disposal cell adjacent and to the south of the TFA as described in change order #6. Approximately 1000 cubic yards were excavated. The depth of the cell is being maintained at approximately 6 feet below ground surface. Other change order related work included placement of most of the stockpiled treated wood and metal debris in the excavated disposal cell to the north of the existing concrete disposal area.

NOTES/ISSUES

None

Prepared By: E&E field staff

Title: Oversight Engineers

Signature:



ecology and environment, inc.

DAILY FIELD REPORT NO.: 51

Date: 6/25/2003

Day: Wednesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: <u>X</u>	Morning: <u>50 °F</u>	Clean: <u> </u>
Part Cldy: <u> </u>	Midday: <u>65 °F</u>	Dusty: <u>X</u>
Overcast: <u> </u>	Afternoon: <u>75 °F</u>	Muddy: <u> </u>
Rain: <u> </u>		Other: <u> </u>
Fog: <u> </u>		
Snow: <u> </u>		
Other: <u> </u>		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	8	Mark Henry was not on-site.

VISITORS

Time In	Time Out	Name	Representing	Remarks

MAJOR EQUIPMENT ON SITE

MAJOR EQUIPMENT ON SITE	MATERIALS DELIVERED TO SITE
Manitowac 4000W Vicon Crane	No more project related material deliveries expected.
Manitowac 3900W Vicon Crane	
CAT 950 Loader	
2000 Gallon Water Truck	
Grove AMZ86XT Man-lift	
CAT 322B Tracked Excavator	
I.C.E. Power Unit, Model 570	
I.C.E. Vibratory Driver, Model 4450	
CAT 426B (turbo) Backhoe	
John Deere 200C Excavator	
Pressure washer/steam cleaner	
CAT D6 LPG Tracked Dozer	
CAT CS-563D Vibratory Compactor	

NONCONFORMANCES NOTED

NONCONFORMANCES NOTED	WHO WAS NOTIFIED?
None	



ecology and environment, inc.

DAILY FIELD REPORT NO.: 51

Date: 6/25/2003

Day: Wednesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

SAFETY CONCERNS NOTED

WHO WAS NOTIFIED?

None

RIVER CONDITIONS NOTED

Morrison Bridge Gage: None Malfunction of gage, no data

River Stage at Site: * Very low, below site gage.

NAPL Sheen Observations: Yes

Construction Induced Runoff Observations: None

Photo Documentation: Yes

Other:

WORK COMPLETED

1. Remtech completed the placement of sheet pile for the tie-in of the S-B wall. To finish the tie-in Remtech angled the last three sheet pile pairs toward the inside of the S-B wall and stopped placing when undisturbed soil was encountered. This method was adopted because all of the Omega corner stock was utilized. Remtech expects to be completed with driving operations on the south end tomorrow morning.

2. Remtech completed the excavation of the interceptor trench spoils disposal cell and spread out the wood chip as directed by E&E. Remtech has been further directed to pick out the larger wood chunks and include those in the treated wood disposal cell.

NOTES/ISSUES

None

Prepared By: E&E field staff

Title: Oversight Engineers

Signature:



ecology and environment, inc.

DAILY FIELD REPORT NO.: 52

Date: 6/26/2003 Day: Thursday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: <u>X</u>	Morning: <u>50 °F</u>	Clean: <u> </u>
Part Cldy: <u> </u>	Midday: <u>65 °F</u>	Dusty: <u>X</u>
Overcast: <u> </u>	Afternoon: <u>80 °F</u>	Muddy: <u> </u>
Rain: <u> </u>		Other: <u> </u>
Fog: <u> </u>		
Snow: <u> </u>		
Other: <u> </u>		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	8	Mark Henry was not on-site.

VISITORS

Time In	Time Out	Name	Representing	Remarks

MAJOR EQUIPMENT ON SITE

MATERIALS DELIVERED TO SITE

Manitowac 4000W Vicon Crane	No more project related material deliveries expected.
Manitowac 3900W Vicon Crane	
CAT 950 Loader	
2000 Gallon Water Truck	
Grove AMZ86XT Man-lift	
CAT 322B Tracked Excavator	
I.C.E. Power Unit, Model 570	
I.C.E. Vibratory Driver, Model 4450	
CAT 426B (turbo) Backhoe	
John Deere 200C Excavator	
Pressure washer/steam cleaner	
CAT D6 LPG Tracked Dozer	
CAT CS-563D Vibratory Compactor	

NONCONFORMANCES NOTED

WHO WAS NOTIFIED?

None	
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ecology and environment, inc.

DAILY FIELD REPORT NO.: 52

Date: 6/26/2003

Day: Thursday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

SAFETY CONCERNS NOTED

WHO WAS NOTIFIED?

None

RIVER CONDITIONS NOTED

Morrison Bridge Gage: 5.31 ft. NGVD Low tide at 13:30

River Stage at Site: 5.21 ft. NGVD

NAPL Sheen Observations: Yes

Construction Induced Runoff Observations: None

Photo Documentation: Yes

Other:

WORK COMPLETED

1. Remtech completed normal sheet pile driving operations today. The final installed sheet pile count is 357. This number includes pairs and a few individual sheets required for Omega corners. The last two pairs are 80-feet in length. Only one uninstalled 80-foot pair remains. By the lunch Remtech was able to get the sheets along the south beach that met with refusal to grade. At the time of the refusal Remtech had not yet added the extra weight to the hammer. After lunch Remtech began the attempt to drive the refusals in the bulkhead area. Two to three hours into the attempt Remtech had still had very limited success. E&E's oversight engineer suggested that Remtech use the water truck to cool the interlocks, the sheet pile where the vice grip bights, and to give the interlocks some lubrication. It appears to be working. Multiple refusal sheets were advanced to grade.

2. Very little effort was put forth on the change order 6 tasks today because Remtech is ready to excavate the interceptor trench. A task that would be best completed as soon after starting as possible. However, during the afternoon an operator on an excavator separated large wood chunks from the lift of wood chips and stockpiled them for eventual placement in the treated wood disposal cell.

NOTES/ISSUES

None

Prepared By:

E&E field staff

Title: Oversight Engineers

Signature:



ecology and environment, inc.

DAILY FIELD REPORT NO.: 53

Date: 6/30/2003 **Day:** Monday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: <input checked="" type="checkbox"/>	Morning: 50 °F	Clean: <input type="checkbox"/>
Part Cl dy: <input checked="" type="checkbox"/>	Midday: 65 °F	Dusty: <input checked="" type="checkbox"/>
Overcast: <input type="checkbox"/>	Afternoon: 75 °F	Muddy: <input type="checkbox"/>
Rain: <input type="checkbox"/>		Other: <input type="checkbox"/>
Fog: <input type="checkbox"/>		
Snow: <input type="checkbox"/>		
Other: <input type="checkbox"/>		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	8	Mark Henry was on-site.

VISITORS

Time In	Time Out	Name	Representing	Remarks
10:50	16:20	Kevin Parrett	DEQ	Site Visit
13:05	13:45	Erin Murphy	E&E	Biological Monitor
13:05	13:45	Noreen Roster	E&E	Biological Monitor
9:30	13:00	Steve Campbell	DEQ	Site Visit

MAJOR EQUIPMENT ON SITE

MATERIALS DELIVERED TO SITE

Manitowac 4000W Vicon Crane	No more project related material deliveries expected.
Manitowac 3900W Vicon Crane	
CAT 950 Loader	
2000 Gallon Water Truck	
Grove AMZ86XT Man-lift	
CAT 322B Tracked Excavator	
I.C.E. Power Unit, Model 570	
I.C.E. Vibratory Driver, Model 4450	
CAT 426B (turbo) Backhoe	
John Deere 200C Excavator	
Pressure washer/steam cleaner	
CAT D6 LPG Tracked Dozer	
CAT CS-563D Vibratory Compactor	
80,000 GVW Dump truck	
80,000 GVW Dump truck	



ecology and environment, inc.

DAILY FIELD REPORT NO.: 53

Date: 6/30/2003 Day: Monday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

NONCONFORMANCES NOTED

WHO WAS NOTIFIED?

None

SAFETY CONCERNS NOTED

WHO WAS NOTIFIED?

None

RIVER CONDITIONS NOTED

Morrison Bridge Gage:	5.09	ft. NGVD	Low tide at 16:40
River Stage at Site:	4.99	ft. NGVD	
NAPL Sheen Observations:	None		
Construction Induced Runoff Observations:	None		
Photo Documentation:	None		

Other:

WORK COMPLETED

1. Remtech completed all sheet pile driving operations today with the final attempts to get refusals in the bulkhead area to grade. By days end only 6 individual sheets remained above grade. However, one sheet (#122) has 4'1" above grade which is within 5 inches of design depth and will be considered as meeting design depth. The amounts of refusal (amounts above ground surface) were 12' of #143, 15'3" of #146, 16'4" of #147, 5'2" of #148, and 12'10" of #149.

2. Remtech informed E&E that they did not have a response to their addendum to the general construction NPDES permit from DEQ and were reluctant to start digging without it. Therefore, E&E contacted DEQ about the situation. DEQ was able to get verbal approval but would require an official submittal of some documentation from Remtech. Remtech began excavation of the interceptor trench at approximately 8:30. Two dump trucks, an excavator, and a front loader were utilized. By days end it was estimated by Remtech that they were half way completed with excavation and expected to complete excavation tomorrow. The crew was in respirators while working near the excavation. E&E observed operations from an upwind vantage point and also used respirators when near the excavation. The excavated material has a strong odor and at times appears to be saturated. The water level in the excavation is approximately 1.5-2 feet below river level. Stress cracks appeared on the access road within the sheet pile wall and the wall appeared to be bowing slightly so Remtech initiated the process of backfilling. As the excavation was backfilled from the north southward the water and floating production (NAPL) was displaced towards the open water surface within the excavation. Remtech plans to skim as much as possible from the surface when the excavation is complete.

NOTES/ISSUES

None



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DAILY FIELD REPORT NO.: 53

Date: 6/30/2003 **Day:** Monday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Prepared By: Andrew Murphy

Title: Oversight Engineer

Signature:

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DAILY FIELD REPORT NO.: 54

Date: 7/1/2003 Day: Tuesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: <u>X</u>	Morning: <u>50 °F</u>	Clean: <u></u>
Part Cldy: <u></u>	Midday: <u>75 °F</u>	Dusty: <u>X</u>
Overcast: <u></u>	Afternoon: <u>80 °F</u>	Muddy: <u></u>
Rain: <u></u>		Other: <u></u>
Fog: <u></u>		
Snow: <u></u>		
Other: <u></u>		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	8	Mark Henry was not on-site.
2	Field Crane Services	2	Dismantling cranes
3	David Evans and Associates	2	As-built surveying

VISITORS

Time In	Time Out	Name	Representing	Remarks
6:50	11:20	Erin Murphy	E&E	Biological Monitor
12:45	17:30	Erin Murphy	E&E	Biological Monitor
11:45	17:40	Chad Nancarrow	E&E	Oversight

MAJOR EQUIPMENT ON SITE

MATERIALS DELIVERED TO SITE

Manitowac 4000W Vicon Crane	No more project related material deliveries expected.
Manitowac 3900W Vicon Crane	
CAT 950 Loader	
2000 Gallon Water Truck	
Grove AMZ86XT Man-lift	
CAT 322B Tracked Excavator	
I.C.E. Power Unit, Model 570	
I.C.E. Vibratory Driver, Model 4450	
CAT 426B (turbo) Backhoe	
John Deere 200C Excavator	
Pressure washer/steam cleaner	
CAT D6 LPG Tracked Dozer	
CAT CS-563D Vibratory Compactor	
80,000 GVW Dump truck	
80,000 GVW Dump truck	



ecology and environment, inc.

DAILY FIELD REPORT NO.: 54

Date: 7/1/2003 Day: Tuesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

NONCONFORMANCES NOTED

WHO WAS NOTIFIED?

None

SAFETY CONCERNS NOTED

WHO WAS NOTIFIED?

None

RIVER CONDITIONS NOTED

Morrison Bridge Gage: 4.62 ft. NGVD Low tide at 17:15

River Stage at Site: 4.52 ft. NGVD

NAPL Sheen Observations: Yes, see note below.

Construction Induced Runoff Observations: None

Photo Documentation: Yes

Other:

WORK COMPLETED

1. Remtech began disassembling the cranes today by taking some of the boom sections from the 3900 W crane and using this shortened crane to dismantle the 4000 W. Multiple section of boom were taken offsite.

2. Remtech continued excavation and backfilling of the interceptor trench today and by days end had not yet completed the excavation. There appears to be about 20 more feet of trench remaining. Remtech was instructed to quit excavation when drain rock and other interceptor trench materials are no longer visible in trench or they reach the end of the wood piling wall.

NOTES/ISSUES

Multiple bubbles that sheen when they burst were observed at low water (low tide) today. At one time there were six distinct rainbow sheen areas within the containment boom. One area approximately 30 feet riverward from dock remnants bubbled and a sheen appeared frequently. The containment boom currently encompasses an area from approximately STA 4+00 to the end of the bulkhead and out about 100 feet.

Prepared By: Andrew Murphy

Title: Oversight Engineer

Signature:



ecology and environment, inc.

DAILY FIELD REPORT NO.: 55

Date: 7/2/2003 **Day:** Wednesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: <u>X</u>	Morning: <u>50 °F</u>	Clean: <u> </u>
Part Cldy: <u> </u>	Midday: <u>75 °F</u>	Dusty: <u>X</u>
Overcast: <u> </u>	Afternoon: <u>80 °F</u>	Muddy: <u> </u>
Rain: <u> </u>		Other: <u> </u>
Fog: <u> </u>		
Snow: <u> </u>		
Other: <u> </u>		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	8	Mark Henry was on-site (2 crew members left site).
2	Field Crane Services	2	Dismantling cranes
3	David Evans and Associates	2	As-built surveying related to CO #6 (7:45-10:15).
4	Campbell Cranes	2	Assisting Field Crane Services with cranes.

VISITORS

Time In	Time Out	Name	Representing	Remarks
6:50	11:20	Erin Murphy	E&E	Biological Monitor
9:40	14:30	Steve Campbell	DEQ	Weekly Meeting
10:05	14:30	Kevin Parrett	DEQ	Weekly Meeting
6:50	11:20	John Montgomery	E&E	Weekly Meeting
7:00	15:15	Chad Nancarrow	E&E	Weekly Meeting and Oversight

MAJOR EQUIPMENT ON SITE

Manitowac 3900W Vicon Crane
Campbell Crane
CAT 950 Loader
2000 Gallon Water Truck
Grove AMZ86XT Man-lift
CAT 322B Tracked Excavator
CAT 426B (turbo) Backhoe
John Deere 200C Excavator
Pressure washer/steam cleaner
CAT D6 LPG Tracked Dozer
CAT CS-563D Vibratory Compactor

MATERIALS DELIVERED TO SITE

No more project related material deliveries expected.



ecology and environment, inc.

DAILY FIELD REPORT NO.: 55

Date: 7/2/2003

Day: Wednesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

80,000 GVW Dump truck

80,000 GVW Dump truck

NONCONFORMANCES NOTED

WHO WAS NOTIFIED?

None

SAFETY CONCERNS NOTED

WHO WAS NOTIFIED?

None

RIVER CONDITIONS NOTED

Morrison Bridge Gage: 4.57 ft. NGVD Low tide at 17:45

River Stage at Site: 4.47 ft. NGVD

NAPL Sheen Observations: None observed

Construction Induced Runoff Observations: None

Photo Documentation: None

Other:

WORK COMPLETED

1. Remtech continued to dismantle and remove the 4000 W crane today. The vibratory hammer and power unit were also removed from the site. Campbell Cranes mobilized a rubber tired crane to the site to be used while dismantling and loading the 3900 W crane.

2. Remtech completed the excavation of the interceptor trench today and will be utilizing absorbent pads to skim the surface of the water remaining in the trench prior to backfilling. Based on the finished dimensions of the trench and the projected depth E&E estimates that approximately 1,500 cubic yards of material was removed from the trench area. Remtech was instructed to survey the foot print and bottom depth of the disposal cell prior to covering. The water and residual NAPL will be bailed out and mixed with some soil for transport in the morning.

NOTES/ISSUES

None

Prepared By:

Andrew Murphy

Title: Oversight Engineer

Signature:



ecology and environment, inc.

DAILY FIELD REPORT NO.: 56

Date: 7/3/2003

Day: Thursday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: <u>X</u>	Morning: <u>50 °F</u>	Clean: <u> </u>
Part Clody: <u> </u>	Midday: <u>75 °F</u>	Dusty: <u>X</u>
Overcast: <u> </u>	Afternoon: <u>80 °F</u>	Muddy: <u> </u>
Rain: <u> </u>		Other: <u> </u>
Fog: <u> </u>		
Snow: <u> </u>		
Other: <u> </u>		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	6	Mark Henry was not on-site.
2	Field Crane Services	2	Dismantling cranes
3	Campbell Cranes	2	Assisting Field Crane Services with cranes.

VISITORS

Time In	Time Out	Name	Representing	Remarks
10:10	11:50	Neil Bennett	ADT	Site visit for O&M
10:30	11:50	Mark Oschner	E&E	Site visit for O&M
10:30	11:50	Ryan Whitchurch	E&E	Site visit for O&M

MAJOR EQUIPMENT ON SITE

Manitowac 3900W Vicon Crane (partially demobed)
CAT 950 Loader
2000 Gallon Water Truck
Grove AMZ86XT Man-lift
CAT 322B Tracked Excavator
CAT 426B (turbo) Backhoe
John Deere 200C Excavator
Pressure washer/steam cleaner
CAT D6 LPG Tracked Dozer
CAT CS-563D Vibratory Compactor
80,000 GVW Dump truck
80,000 GVW Dump truck

MATERIALS DELIVERED TO SITE

No more project related material deliveries expected.

NONCONFORMANCES NOTED

None

WHO WAS NOTIFIED?



ecology and environment, inc.

DAILY FIELD REPORT NO.: 56

Date: 7/3/2003

Day: Thursday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

SAFETY CONCERNS NOTED

WHO WAS NOTIFIED?

None

RIVER CONDITIONS NOTED

Morrison Bridge Gage: 3.51 ft. NGVD Low tide at 18:30

River Stage at Site: 3.41 ft. NGVD

NAPL Sheen Observations: Yes

Construction Induced Runoff Observations: None

Photo Documentation: None

Other:

WORK COMPLETED

1. Remtech dismantled, loaded, and removed most of the 3900 W crane today. The tracks and parts of the carboy will be removed from site this weekend or early next week. The rubber tired Campbell crane left the site at the end of the work day.

2. Remtech completed skimming, bailing, and backfilling of the excavated interceptor trench today. Absorbent pads used for skimming were placed within the interceptor trench excavation spoils disposal cell. The highly contaminated water was bailed out with the excavator bucket and mixed with soils and then transported to the disposal cell. Only one operator worked on change order tasks today. In addition to the excavation of the interceptor trench tasks, he sorted treated wood debris from a grubbing stockpile on the bluff and started to grade the slope between the bulkhead and wells MW-7s and MW-8i.

NOTES/ISSUES

1. Multiple bubbling sheen areas were observed outside and within the boom at low water (low tide) today. In one location, west of the bulkhead, the bubbles appeared to be brown prior to bursting, and then a rainbow sheen emanated from the area after they burst.

Prepared By:

Andrew Murphy

Title: Oversight Engineer

Signature:



ecology and environment, inc.

DAILY FIELD REPORT NO.: 57

Date: 7/7/2003 **Day:** Monday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: <u>X</u>	Morning: <u>50 °F</u>	Clean: <u> </u>
Part Cldy: <u> </u>	Midday: <u>75 °F</u>	Dusty: <u>X</u>
Overcast: <u> </u>	Afternoon: <u>80 °F</u>	Muddy: <u> </u>
Rain: <u> </u>		Other: <u> </u>
Fog: <u> </u>		
Snow: <u> </u>		
Other: <u> </u>		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	6	Mark Henry was not on-site.

VISITORS

Time In	Time Out	Name	Representing	Remarks

MAJOR EQUIPMENT ON SITE

Manitowac 3900W Vicon Crane (partially demobed)
CAT 950 Loader
2000 Gallon Water Truck
CAT 322B Tracked Excavator
CAT 426B (turbo) Backhoe
John Deere 200C Excavator
Pressure washer/steam cleaner
CAT D6 LPG Tracked Dozer
CAT CS-563D Vibratory Compactor
80,000 GVW Dump truck
80,000 GVW Dump truck

MATERIALS DELIVERED TO SITE

No more project related material deliveries expected.

NONCONFORMANCES NOTED

None

WHO WAS NOTIFIED?

SAFETY CONCERNS NOTED

None

WHO WAS NOTIFIED?



ecology and environment, inc.

DAILY FIELD REPORT NO.: 57

Date: 7/7/2003 Day: Monday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

RIVER CONDITIONS NOTED

Morrison Bridge Gage:	3.32	ft. NGVD	Low tide at 9:00
River Stage at Site:	3.22	ft. NGVD	
NAPL Sheen Observations:	None		
Construction Induced Runoff Observations:	None		
Photo Documentation:	None		

Other:

WORK COMPLETED

1. Remtech continued with change order #6 related tasks today. Specifically, Remtech's crew removed the remnant piling and cribbing from the bulkhead inside the wall and removed the overburden and approximately 5-8 feet of the unstable upper portion outside the wall. The exposed bluff greater than 2:1 was then contoured to match. The grading of the bluff for the south end inside the wall is now complete.
2. Remtech substantially completed the tasks related to sheet pile installation today. The refusal sheets have been cut off approximately 8-inches above the finish height and the tip elevation in NGVD (rounded up to the nearest whole number) was cut into each sheet. The only related tasks are consolidation of cut off pieces and stockpiling of the spare lengths.

NOTES/ISSUES

None

Prepared By: Andrew Murphy

Title: Oversight Engineer

Signature:



ecology and environment, inc.

DAILY FIELD REPORT NO.: 58

Date: 7/8/2003

Day: Tuesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: <u>X</u>	Morning: <u>50 °F</u>	Clean: <u> </u>
Part Cldy: <u> </u>	Midday: <u>70 °F</u>	Dusty: <u>X</u>
Overcast: <u> </u>	Afternoon: <u>75 °F</u>	Muddy: <u> </u>
Rain: <u>Light (AM)</u>		Other: <u> </u>
Fog: <u> </u>		
Snow: <u> </u>		
Other: <u>Windy</u>		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	6	Mark Henry was not on-site.
2	David Evans and Associates	2	Surveying disposal cell and staking S-B wall cen

VISITORS

Time In	Time Out	Name	Representing	Remarks

MAJOR EQUIPMENT ON SITE

MATERIALS DELIVERED TO SITE

Manitowac 3900W Vicon Crane (partially demobed)	23 Rolls of Permatex Coir 700 (coconut mat)
CAT 950 Loader	12 boxes 6x1x6 staples (1000 count)
2000 Gallon Water Truck	
CAT 322B Tracked Excavator	
CAT 426B (turbo) Backhoe	
John Deere 200C Excavator	
Pressure washer/steam cleaner	
CAT D6 LPG Tracked Dozer	
CAT CS-563D Vibratory Compactor	
80,000 GVW Dump truck	
80,000 GVW Dump truck	

NONCONFORMANCES NOTED

WHO WAS NOTIFIED?

None

SAFETY CONCERNS NOTED

WHO WAS NOTIFIED?

None



ecology and environment, inc.

DAILY FIELD REPORT NO.: 58

Date: 7/8/2003 **Day:** Tuesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

RIVER CONDITIONS NOTED

Morrison Bridge Gage:	3.74	ft. NGVD	Low tide at 10:30
River Stage at Site:	3.64	ft. NGVD	
NAPL Sheen Observations:	None		
Construction Induced Runoff Observations:	None		
Photo Documentation:	None		

Other:

WORK COMPLETED

1. Remtech continued to cover and compact the interceptor trench spoils cell today under change order #6. Remtech also did other change order related work today including grading a portion of the bluff north of the bulkhead.
2. Remtech, as part of the close out punch list, cleaned up some of the remaining bio-bags and silt fencing on the beach today and drug most of the extra sheet pile to the designated storage area using the dozer. The operator, during the process of dragging the sheet to the area, struck and destroyed a transducer cable. The cable was completely separated from the head. Remtech's superintendent was informed and E&E is determining what will be necessary to remedy the situation and how best to retrieve the transducer.

NOTES/ISSUES

None

Prepared By: Andrew Murphy

Title: Oversight Engineer

Signature:



ecology and environment, inc.

DAILY FIELD REPORT NO.: 59

Date: 7/9/2003

Day: Wednesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: <u>X</u>	Morning: <u>50 °F</u>	Clean: <u> </u>
Part Cldy: <u> </u>	Midday: <u>75 °F</u>	Dusty: <u>X</u>
Overcast: <u> </u>	Afternoon: <u>80 °F</u>	Muddy: <u> </u>
Rain: <u> </u>		Other: <u> </u>
Fog: <u> </u>		
Snow: <u> </u>		
Other: <u> </u>		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	6	Mark Henry was on-site.

VISITORS

Time In	Time Out	Name	Representing	Remarks
13:00	16:11	Steve Campbell	ODEQ	Weekly Meeting
13:00	16:30	Chad Nancarrow	E&E	Weekly Meeting
11:00	16:00	John Montgomery	E&E	Weekly Meeting

MAJOR EQUIPMENT ON SITE

MATERIALS DELIVERED TO SITE

Manitowac 3900W Vicon Crane (partially demobed)	No more project related material deliveries expected.
CAT 950 Loader	
2000 Gallon Water Truck	
CAT 322B Tracked Excavator	
CAT 426B (turbo) Backhoe	
John Deere 200C Excavator	
Pressure washer/steam cleaner	
CAT D6 LPG Tracked Dozer	
CAT CS-563D Vibratory Compactor	
80,000 GVW Dump truck	
80,000 GVW Dump truck	

NONCONFORMANCES NOTED

WHO WAS NOTIFIED?

Staples delivered with fabric do not meet manufacturers installation guidelines.	Remtech's PM and Superintendent.
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SAFETY CONCERNS NOTED

WHO WAS NOTIFIED?

None	
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ecology and environment, inc.

DAILY FIELD REPORT NO.: 59

Date: 7/9/2003

Day: Wednesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

RIVER CONDITIONS NOTED

Morrison Bridge Gage:	3.60	ft. NGVD	Low tide at 11:30
River Stage at Site:	3.50	ft. NGVD	
NAPL Sheen Observations:	None		
Construction Induced Runoff Observations:	None		
Photo Documentation:	None		

Other:

WORK COMPLETED

1. Remtech completely covered and compacted the interceptor trench spoils cell and continued grading the north beach bluff today. As a result of a discussion during the weekly meeting, Remtech will be making a berm on the ground surface at approximately the centerline of the S-B wall as a traffic deterrent. Soil being excavated from the bluff grading process is being stockpiled along the wall to make the berm.
2. Remtech reconnected the water service to the shop today but has not yet completely backfilled the trench.

NOTES/ISSUES

None

Prepared By:

Andrew Murphy

Title: Oversight Engineer

Signature:



ecology and environment, inc.

DAILY FIELD REPORT NO.: 60

Date: 7/10/2003 **Day:** Thursday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: <u>X</u>	Morning: <u>50 °F</u>	Clean: <u></u>
Part Cldy: <u></u>	Midday: <u>75 °F</u>	Dusty: <u>X</u>
Overcast: <u></u>	Afternoon: <u>80 °F</u>	Muddy: <u></u>
Rain: <u></u>		Other: <u></u>
Fog: <u></u>		
Snow: <u></u>		
Other: <u></u>		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	6	Mark Henry was not on-site.

VISITORS

Time In	Time Out	Name	Representing	Remarks

MAJOR EQUIPMENT ON SITE

Manitowac 3900W Vicon Crane (partially demobed)
CAT 950 Loader
2000 Gallon Water Truck
CAT 322B Tracked Excavator
CAT 426B (turbo) Backhoe
John Deere 200C Excavator
Pressure washer/steam cleaner
CAT D6 LPG Tracked Dozer
CAT CS-563D Vibratory Compactor
80,000 GVW Dump truck
80,000 GVW Dump truck

MATERIALS DELIVERED TO SITE

No more project related material deliveries expected.

NONCONFORMANCES NOTED

None

WHO WAS NOTIFIED?

SAFETY CONCERNS NOTED

None

WHO WAS NOTIFIED?



ecology and environment, inc.

DAILY FIELD REPORT NO.: 60

Date: 7/10/2003 **Day:** Thursday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

RIVER CONDITIONS NOTED

Morrison Bridge Gage:	4.95	ft. NGVD Low tide at 12:45
River Stage at Site:	4.85	ft. NGVD
NAPL Sheen Observations:	None	
Construction Induced Runoff Observations:	None	
Photo Documentation:	None	

Other:

WORK COMPLETED

1. Remtech continued grading the north bluff and placing the excavated material along the S-B wall alignment today.
2. Remtech completed the backfilling of the trench for the water service into the shop.

NOTES/ISSUES

None

Prepared By:

Andrew Murphy

Title: Oversight Engineer

Signature:



ecology and environment, inc.

DAILY FIELD REPORT NO.: 61

Date: 7/14/2003 Day: Monday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: <u>X</u>	Morning: <u>60 °F</u>	Clean: <u> </u>
Part Cldy: <u> </u>	Midday: <u>75 °F</u>	Dusty: <u>X</u>
Overcast: <u> </u>	Afternoon: <u>80 °F</u>	Muddy: <u> </u>
Rain: <u> </u>		Other: <u> </u>
Fog: <u> </u>		
Snow: <u> </u>		
Other: <u> </u>		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	5	Mark Henry was not on-site.

VISITORS

Time In	Time Out	Name	Representing	Remarks

MAJOR EQUIPMENT ON SITE

MAJOR EQUIPMENT ON SITE	MATERIALS DELIVERED TO SITE
CAT 950 Loader	No more project related material deliveries expected.
2000 Gallon Water Truck	
CAT 322B Tracked Excavator	
CAT 426B (turbo) Backhoe	
John Deere 200C Excavator	
Pressure washer/steam cleaner	
CAT D6 LPG Tracked Dozer	
80,000 GVW Dump truck	
80,000 GVW Dump truck	

NONCONFORMANCES NOTED

NONCONFORMANCES NOTED	WHO WAS NOTIFIED?
None	

SAFETY CONCERNS NOTED

SAFETY CONCERNS NOTED	WHO WAS NOTIFIED?
None	

RIVER CONDITIONS NOTED

Morrison Bridge Gage:	4.52	ft. NGVD	Low tide at 16:00
River Stage at Site:	4.42	ft. NGVD	



ecology and environment, inc.

DAILY FIELD REPORT NO.: 61

Date: 7/14/2003

Day: Monday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

NAPL Sheen Observations: None

Construction Induced Runoff Observations: None

Photo Documentation: None

Other:

WORK COMPLETED

1. Remtech continued grading the north beach bluff today. Excavated material is being placed along the S-B wall alignment for future incorporation into the vehicle access control berm.
2. Remtech completed the access road cut of the railroad spur today. The cut material was utilized as fill for a berm along the fence line to the gate of the FWDA. This berm will stop the possibility of overland flow down the access road to the north of the sheet pile wall.

NOTES/ISSUES

1. Troy Feathers will be not be onsite this week. Aaron Kyler, "Remtech's leading earth work supervisor", is the acting superintendent. Aaron has been onsite throughout the project.

Prepared By: Andrew Murphy

Title: Oversight Engineer

Signature:



ecology and environment, inc.

DAILY FIELD REPORT NO.: 62

Date: 7/15/2003 **Day:** Tuesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: <input checked="" type="checkbox"/>	Morning: 60 °F	Clean: <input type="checkbox"/>
Part Cldy: <input type="checkbox"/>	Midday: 75 °F	Dusty: <input checked="" type="checkbox"/>
Overcast: <input type="checkbox"/>	Afternoon: 80 °F	Muddy: <input type="checkbox"/>
Rain: <input type="checkbox"/>		Other: <input type="checkbox"/>
Fog: <input type="checkbox"/>		
Snow: <input type="checkbox"/>		
Other: <input type="checkbox"/>		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	5	Mark Henry was not on-site.

VISITORS

Time In	Time Out	Name	Representing	Remarks
15:00	17:20	Ryan Whitchurch	E&E	Transducer downloading

MAJOR EQUIPMENT ON SITE

CAT 950 Loader
2000 Gallon Water Truck
CAT 322B Tracked Excavator
CAT 426B (turbo) Backhoe
John Deere 200C Excavator
Pressure washer/steam cleaner
CAT D6 LPG Tracked Dozer
80,000 GVW Dump truck
80,000 GVW Dump truck

MATERIALS DELIVERED TO SITE

No more project related material deliveries expected.

NONCONFORMANCES NOTED

None

WHO WAS NOTIFIED?

SAFETY CONCERNS NOTED

Remtech's superintendent left site early (15:00) to visit doctor about an existing back

WHO WAS NOTIFIED?

E&E Project Manager

RIVER CONDITIONS NOTED

Morrison Bridge Gage:	4.71	ft. NGVD	Low tide at 17:45
River Stage at Site:	4.61	ft. NGVD	



ecology and environment, inc.

DAILY FIELD REPORT NO.: 62

Date: 7/15/2003 **Day:** Tuesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

NAPL Sheen Observations: None

Construction Induced Runoff Observations: None

Photo Documentation: None

Other:

WORK COMPLETED

1. Remtech substantially completed grading the north beach bluff today.

NOTES/ISSUES

1. E&E and Remtech made a failed attempt to retrieve the transducer in MW-ks that was liberated from its cable during sheet pile stock piling.

Prepared By: Andrew Murphy

Title: Oversight Engineer

Signature:



ecology and environment, inc.

DAILY FIELD REPORT NO.: 63

Date: 7/16/2003 Day: Wednesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: <u>X</u>	Morning: <u>60 °F</u>	Clean: <u></u>
Part Cldy: <u></u>	Midday: <u>75 °F</u>	Dusty: <u>X</u>
Overcast: <u></u>	Afternoon: <u>80 °F</u>	Muddy: <u></u>
Rain: <u></u>		Other: <u></u>
Fog: <u></u>		
Snow: <u></u>		
Other: <u></u>		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	5	Mark Henry was not on-site.

VISITORS

Time In	Time Out	Name	Representing	Remarks

MAJOR EQUIPMENT ON SITE	MATERIALS DELIVERED TO SITE
CAT 950 Loader	No more project related material deliveries expected.
2000 Gallon Water Truck	
CAT 322B Tracked Excavator	
CAT 426B (turbo) Backhoe	
John Deere 200C Excavator	
Pressure washer/steam cleaner	
CAT D6 LPG Tracked Dozer	
80,000 GVW Dump truck	
80,000 GVW Dump truck	

NONCONFORMANCES NOTED	WHO WAS NOTIFIED?
None	

SAFETY CONCERNS NOTED	WHO WAS NOTIFIED?
Remtech's superintendent left site early (15:00) to visit doctor about an existing back problem.	E&E Project Manager

RIVER CONDITIONS NOTED
Morrison Bridge Gage: 3.98 ft. NGVD Low tide at 18:00



ecology and environment, inc.

DAILY FIELD REPORT NO.: 63

Date: 7/16/2003

Day: Wednesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

River Stage at Site: 3.88 ft. NGVD

NAPL Sheen Observations: None

Construction Induced Runoff Observations: None

Photo Documentation: None

Other:

WORK COMPLETED

1. Remtech completed the beach clean up of treated wood and project generated debris. Remtech also leveled stockpiles and finished graded the entire site today by knocking down remaining stockpiled brush and soil and track walking areas that were too rough.

NOTES/ISSUES

1. Remtech's acting superintendent made another attempt at retrieval of the transducer in MW-Ks today.

Prepared By:

Andrew Murphy

Title: Oversight Engineer

Signature:



ecology and environment, inc.

DAILY FIELD REPORT

64

Date: 7/17/2003

Day: Thursday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: <u>X</u>	Morning: <u>60 °F</u>	Clean: <u></u>
Part Cldy: <u></u>	Midday: <u>75 °F</u>	Dusty: <u>X</u>
Overcast: <u></u>	Afternoon: <u>80 °F</u>	Muddy: <u></u>
Rain: <u></u>		Other: <u></u>
Fog: <u></u>		
Snow: <u></u>		
Other: <u></u>		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	5	Mark Henry was not on-site.

VISITORS

Time In	Time Out	Name	Representing	Remarks

MAJOR EQUIPMENT ON SITE	MATERIALS DELIVERED TO SITE
CAT 950 Loader	No more project related material deliveries expected.
2000 Gallon Water Truck	
CAT 322B Tracked Excavator	
CAT 426B (turbo) Backhoe	
John Deere 200C Excavator	
Pressure washer/steam cleaner	
CAT D6 LPG Tracked Dozer	
80,000 GVW Dump truck	
80,000 GVW Dump truck	

NONCONFORMANCES NOTED	WHO WAS NOTIFIED?
None	

SAFETY CONCERNS NOTED	WHO WAS NOTIFIED?
Remtech's superintendent left site early (15:00) to visit doctor about an existing back problem.	E&E Project Manager

RIVER CONDITIONS NOTED
Morrison Bridge Gage: 4.27 ft. NGVD Low tide at 18:00



ecology and environment, inc.

DAILY FIELD REPORT

64

Date: 7/17/2003

Day: Thursday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

River Stage at Site: 4.17 ft. NGVD

NAPL Sheen Observations: None

Construction Induced Runoff Observations: None

Photo Documentation: None

Other:

WORK COMPLETED

1. Remtech began installation of the jute mat (coconut mat) for erosion control of disturbed soil on the bluffs and access bumps over the sheet pile wall. Remtech rolled the sheets down slope with 6-12 inch overlap and no seams parallel to the slope. The upper portion is held down by a 12-inch deep v-notch anchor trench. Stapling started in the southern most corner and will be spaced 2-feet apart with a diagonal pattern (lines 40-50 degrees across the slope). Remtech deployed more mat then they were able to staple. Therefore, they stapled the overlap seams in case of strong winds.

NOTES/ISSUES

None

Prepared By: Andrew Murphy

Title: Oversight Engineer

Signature:



ecology and environment, inc.

DAILY FIELD REPORT NO.: 65

Date: 7/21/2003 Day: Monday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: <u>X</u>	Morning: <u>65 °F</u>	Clean: <u></u>
Part Cldy: <u></u>	Midday: <u>80 °F</u>	Dusty: <u>X</u>
Overcast: <u></u>	Afternoon: <u>94 °F</u>	Muddy: <u></u>
Rain: <u></u>		Other: <u></u>
Fog: <u></u>		
Snow: <u></u>		
Other: <u></u>		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	5	Mark Henry was not on-site.

VISITORS

Time In	Time Out	Name	Representing	Remarks

MAJOR EQUIPMENT ON SITE	MATERIALS DELIVERED TO SITE
CAT 950 Loader	No more project related material deliveries expected.
2000 Gallon Water Truck	
CAT 322B Tracked Excavator	
CAT 426B (turbo) Backhoe	
John Deere 200C Excavator	
Pressure washer/steam cleaner	
CAT D6 LPG Tracked Dozer	
80,000 GVW Dump truck	
80,000 GVW Dump truck	

NONCONFORMANCES NOTED	WHO WAS NOTIFIED?
None	

SAFETY CONCERNS NOTED	WHO WAS NOTIFIED?
None	

RIVER CONDITIONS NOTED			
Morrison Bridge Gage:	3.35	ft. NGVD	Low tide at 17:30
River Stage at Site:	3.25	ft. NGVD	



ecology and environment, inc.

DAILY FIELD REPORT NO.: 65

Date: 7/21/2003 **Day:** Monday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

NAPL Sheen Observations: None

Construction Induced Runoff Observations: None

Photo Documentation: None

Other:

WORK COMPLETED

1. Remtech continued installation of the jute mat (coconut mat) for erosion control of disturbed soil on the bluffs and access bumps over the sheet pile wall. Remtech rolled the sheets down slope with 6-12 inch overlap and no seams parallel to the slope. The upper portion is held down by a 12-inch deep v-notch anchor trench. Stapling was spaced 2-feet apart with a diagonal pattern (lines 40-50 degrees across the slope). Jute mat has been placed and stapled from STA 1+25 to approximately STA 5+00.

2. Remtech placed small-wood debris stockpile into disposal pit, graded out most of the soil piles, and filled in depression areas throughout the site. Lastly, they made several attempts to remove the transducer and cable from MW-Ks with no success. Remtech plans to utilize their drilling subcontractor, when they are onsite to abandon and reinstall other wells, to attempt to remove the transducer.

NOTES/ISSUES

None

Prepared By: Mike Coenen

Title: Oversight Engineer

Signature:



ecology and environment, inc.

DAILY FIELD REPORT NO.: 66

Date: 7/22/2003 **Day:** Tuesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: <u>X</u>	Morning: <u>65 °F</u>	Clean: <u></u>
Part Cldy: <u></u>	Midday: <u>76 °F</u>	Dusty: <u>X</u>
Overcast: <u></u>	Afternoon: <u>89 °F</u>	Muddy: <u></u>
Rain: <u></u>		Other: <u></u>
Fog: <u></u>		
Snow: <u></u>		
Other: <u></u>		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	5	Mark Henry was not on-site. Troy Feathers onsite in afternoon only.

VISITORS

Time In	Time Out	Name	Representing	Remarks
8:00	13:00	Pete Handforth, Jon Broadwater	DEA	Surveyors

MAJOR EQUIPMENT ON SITE

CAT 950 Loader
2000 Gallon Water Truck
CAT 322B Tracked Excavator
CAT 426B (turbo) Backhoe
John Deere 200C Excavator
Pressure washer/steam cleaner
CAT D6 LPG Tracked Dozer
80,000 GVW Dump truck
80,000 GVW Dump truck

MATERIALS DELIVERED TO SITE

No more project related material deliveries expected.

NONCONFORMANCES NOTED

None

WHO WAS NOTIFIED?

SAFETY CONCERNS NOTED

None

WHO WAS NOTIFIED?

RIVER CONDITIONS NOTED

Morrison Bridge Gage: 3.37 ft. NGVD Low tide at 18:30



ecology and environment, inc.

DAILY FIELD REPORT NO.: 66

Date: 7/22/2003 **Day:** Tuesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

River Stage at Site: 3.27 ft. NGVD

NAPL Sheen Observations: None

Construction Induced Runoff Observations: None

Photo Documentation: None

Other:

WORK COMPLETED

1. Remtech continued installation of the jute mat (coconut mat) for erosion control of disturbed soil on the bluffs and access bumps over the sheet pile wall. Remtech rolled the sheets down slope with 6-12 inch overlap. The upper portion is held down by a 12-inch deep v-notch anchor trench. Stapling was spaced 2-feet apart with a diagonal pattern (lines 40-50 degrees across the slope). Jute mat has been placed and stapled from STA 5+00 to approximately STA 7+00.

2. Remtech's surveyor, DEA, was onsite to survey the bulkhead slope, replace the benchmark in the FWDA, locate EW-14 and EW-16, and staked the as-built centerline on the north side of the site. The surveyors used wooden lathe with flagging to stake the centerline. Remtech placed additional metal stakes, approximately 2-feet longer than the lathe, co-located with the lathe to help delineate the S-B wall perimeter.

3. Remtech started constructing the berm around the perimeter of the S-B wall. They started in the FWDA at STA 15+00 and continued to approximately STA 26+50. The berm is continuous except at the wall crossing, approximately 2.5 feet high, and is located along centerline of S-B wall as staked by the surveyors.

4. Remtech placed 8 bags of ready mix concrete with water around the 6-in. water main cap near the south end of the barrier wall. Remtech plans to place 2 more bags of concrete to adequately prevent movement or blow out of the cap.

NOTES/ISSUES

None

Prepared By: Mike Coenen

Title: Oversight Engineer

Signature:



ecology and environment, inc.

DAILY FIELD REPORT NO.: 67

Date: 7/23/2003

Day: Wednesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: <u>X</u>	Morning: <u>63 °F</u>	Clean: <u></u>
Part Cldy: <u></u>	Midday: <u>71 °F</u>	Dusty: <u>X</u>
Overcast: <u></u>	Afternoon: <u>85 °F</u>	Muddy: <u></u>
Rain: <u></u>		Other: <u></u>
Fog: <u></u>		
Snow: <u></u>		
Other: <u></u>		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	5	Mark Henry was not on-site.

VISITORS

Time In	Time Out	Name	Representing	Remarks
14:00	15:10	Steve Campbell	DEQ	Site Visit
14:00	15:10	John Montgomery	E & E	Site Visit

MAJOR EQUIPMENT ON SITE

MAJOR EQUIPMENT ON SITE	MATERIALS DELIVERED TO SITE
CAT 950 Loader	20 rolls of Permea Tex Coir 700 Geotextile Fabric
2000 Gallon Water Truck	10 boxes of 6-in staples for Geotextile Fabric (see Notes below)
CAT 322B Tracked Excavator	
CAT 426B (turbo) Backhoe	
John Deere 200C Excavator	
Pressure washer/steam cleaner	
CAT D6 LPG Tracked Dozer	
80,000 GVW Dump truck	
80,000 GVW Dump truck	

NONCONFORMANCES NOTED

WHO WAS NOTIFIED?

None

SAFETY CONCERNS NOTED

WHO WAS NOTIFIED?

None



ecology and environment, inc.

DAILY FIELD REPORT NO.: 67

Date: 7/23/2003

Day: Wednesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

RIVER CONDITIONS NOTED

Morrison Bridge Gage:	3.32	ft. NGVD	Low tide at 11:30
River Stage at Site:	3.22	ft. NGVD	
NAPL Sheen Observations:	None		
Construction Induced Runoff Observations:	None		
Photo Documentation:	None		

Other:

WORK COMPLETED

1. Remtech continued installation of the jute mat (coconut mat) for erosion control of disturbed soil on the bluffs and access bumps over the sheet pile wall. Remtech rolled the sheets down slope with 6-12 inch overlap. The upper portion is held down by a 12-inch deep v-notch anchor trench. Stapling was spaced 2-feet apart with a diagonal pattern (lines 40-50 degrees across the slope). Jute mat has been placed and stapled from STA 7+00 to approximately STA 9+50.
2. Remtech continued constructing the berm around the perimeter of the S-B wall. The berm has been constructed from STA 15+00 to STA 38+70. The berm is continuous (accept at the wall crossing), approximately 2.5 feet high, and is located along centerline of S-B wall as staked by the surveyors. Some minor clean up work is required around road crossings to complete the berm.
3. Remtech excavated approximately 3-ft. to 4-ft. deep to locate wells EW-14s and EW-16s, which were buried or damaged during site activities. This was done in preparation for well abandonment.

NOTES/ISSUES

The vendor sent the wrong length of staple. They are supposed to be 8-in. long. Remtech will get the correct staples. No impact to completing the erosion control blanket is anticipated.

Prepared By: Mike Coenen

Title: Oversight Engineer

Signature:



ecology and environment, inc.

DAILY FIELD REPORT NO.: 68

Date: 7/24/2003

Day: Thursday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: <u>X</u>	Morning: <u>63 °F</u>	Clean: <u></u>
Part Cldy: <u></u>	Midday: <u>70 °F</u>	Dusty: <u>X</u>
Overcast: <u></u>	Afternoon: <u>83 °F</u>	Muddy: <u></u>
Rain: <u></u>		Other: <u></u>
Fog: <u></u>		
Snow: <u></u>		
Other: <u></u>		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	5	Mark Henry was not on-site.

VISITORS

Time In	Time Out	Name	Representing	Remarks

MAJOR EQUIPMENT ON SITE

CAT 950 Loader
2000 Gallon Water Truck
CAT 322B Tracked Excavator
CAT 426B (turbo) Backhoe
John Deere 200C Excavator
Pressure washer/steam cleaner
CAT D6 LPG Tracked Dozer
80,000 GVW Dump truck
80,000 GVW Dump truck

MATERIALS DELIVERED TO SITE

No more project related material deliveries expected.

NONCONFORMANCES NOTED

None

WHO WAS NOTIFIED?

SAFETY CONCERNS NOTED

None

WHO WAS NOTIFIED?

RIVER CONDITIONS NOTED

Morrison Bridge Gage:	4.03	ft. NGVD	Low tide at 12:30
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ecology and environment, inc.

DAILY FIELD REPORT NO.: 68

Date: 7/24/2003

Day: Thursday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

River Stage at Site: 3.93 ft. NGVD

NAPL Sheen Observations: None

Construction Induced Runoff Observations: None

Photo Documentation: None

Other:

WORK COMPLETED

1. Remtech continued installation of the jute mat (coconut mat) for erosion control of disturbed soil on the bluffs and access bumps over the sheet pile wall. Installation continued as previously described. Jute mat placement started today at approximately STA 11+75 and continued to STA 12+00. Remtech then fell back to STA 9+50 (where they stopped the previous day) and continued to approximately STA 11+00. Remtech skipped ahead to allow mat placement to proceed while roots sticking up from the bank were cut between STA 9+50 to STA 11+00.

2. Remtech completed constructing the berm around the perimeter of the S-B wall. Minor clean up work was completed around road crossings.

3. Remtech partially backfilled the debris disposal pit. The east side of the pit was left open because debris from well abandonment and large wood debris will be placed in pit next week.

NOTES/ISSUES

None

Prepared By: Mike Coenen

Title: Oversight Engineer

Signature:



ecology and environment, inc.

DAILY FIELD REPORT NO.: 69

Date: 7/28/2003 **Day:** Monday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: <u>X</u>	Morning: <u>63 °F</u>	Clean: <u></u>
Part Cldy: <u></u>	Midday: <u>85 °F</u>	Dusty: <u>X</u>
Overcast: <u></u>	Afternoon: <u>99 °F</u>	Muddy: <u></u>
Rain: <u></u>		Other: <u></u>
Fog: <u></u>		
Snow: <u></u>		
Other: <u></u>		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	4	Mark Henry was not on-site.
2	Holocene Drilling	2	Abandon EW-14s, Redevelop EW-16s, Drill new EW-14s.
3	Pacific Fencing	2	Repair or replace fence.

VISITORS

Time In	Time Out	Name	Representing	Remarks
8:05	14:30	Ryan Whitchurch	E&E	Drilling oversight

MAJOR EQUIPMENT ON SITE

CAT 950 Loader
2000 Gallon Water Truck
CAT 322B Tracked Excavator
CAT 426B (turbo) Backhoe
Pressure washer/steam cleaner
80,000 GVW Dump truck
80,000 GVW Dump truck

MATERIALS DELIVERED TO SITE

No more project related material deliveries expected.

NONCONFORMANCES NOTED

None

WHO WAS NOTIFIED?

SAFETY CONCERNS NOTED

None

WHO WAS NOTIFIED?

RIVER CONDITIONS NOTED

Morrison Bridge Gage: 2.83 ft. NGVD Low tide at 14:30



ecology and environment, inc.

DAILY FIELD REPORT NO.: 69

Date: 7/28/2003 **Day:** Monday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

River Stage at Site: 2.73 ft. NGVD

NAPL Sheen Observations: None

Construction Induced Runoff Observations: None

Photo Documentation: None

Other:

WORK COMPLETED

1. Remtech placed the remainder of the jute mat today. They did not have enough of the required 8-in staples so they used 6-in staples along the edges and seams to hold the mat in place. The correct staples are expected to arrive on Tuesday by 09:00. When the staples are delivered, Remtech will place the 8-in. staples in the specified diagonal pattern to complete the erosion control blanket.

2. Remtech picked up large wood debris from the spread out wood chip pile. The large wood debris was placed in the debris pit. Additionally, they started demobilization activities by gathering up tools and small equipment that will not be needed for the remainder of the project.

3. Holocene Drilling began re-drilling EW-14s. The well was drilled approximately 15-feet SW of the damaged EW-14s well, approximately 35-ft. below ground surface to match approximately the same depth as the damaged well. The casing delivery did not arrive as expected so Holocene Drilling shut down operations at approximately 14:30. Holocene Drilling attempted to retrieve the transducer from MW-Ks but was unsuccessful. They make another attempt on Tuesday using a different retrieving device.

4. Pacific Fence began repair of the perimeter fence along the bank. They placed fence posts starting on the side of the site up to approximately STA 12+00.

NOTES/ISSUES

The John Deere 200C Excavator was taken offsite over the weekend and the CAT D6 LPG Tracked Dozer was taken offsite today.

Prepared By: Mike Coenen

Title: Oversight Engineer

Signature:



ecology and environment, inc.

DAILY FIELD REPORT NO.: 70

Date: 7/29/2003

Day: Tuesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: <u>X</u>	Morning: <u>63 °F</u>	Clean: <u></u>
Part Cldy: <u></u>	Midday: <u>85 °F</u>	Dusty: <u>X</u>
Overcast: <u></u>	Afternoon: <u>101 °F</u>	Muddy: <u></u>
Rain: <u></u>		Other: <u></u>
Fog: <u></u>		
Snow: <u></u>		
Other: <u></u>		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	5	Mark Henry was not on-site. Troy Feathers arrived at 15:00.
2	Holocene Drilling	3	Abandon EW-14s, Redevelop EW-16s, Drill new EW-14s.
3	Pacific Fencing	2	Repair or replace fence.

VISITORS

Time In	Time Out	Name	Representing	Remarks
7:45	16:30	Ryan Whitchurch	E&E	Drilling oversight
10:55	15:45	Erin Murphy	E&E	Oversight

MAJOR EQUIPMENT ON SITE

CAT 950 Loader
2000 Gallon Water Truck
CAT 322B Tracked Excavator
CAT 426B (turbo) Backhoe
Pressure washer/steam cleaner
80,000 GVW Dump truck
80,000 GVW Dump truck

MATERIALS DELIVERED TO SITE

No more project related material deliveries expected.

NONCONFORMANCES NOTED

None

WHO WAS NOTIFIED?



ecology and environment, inc.

DAILY FIELD REPORT NO.: 70

Date: 7/29/2003 **Day:** Tuesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

SAFETY CONCERNS NOTED

WHO WAS NOTIFIED?

None

RIVER CONDITIONS NOTED

Morrison Bridge Gage: 3.94 ft. NGVD Low tide at 16:00

River Stage at Site: 3.84 ft. NGVD

NAPL Sheen Observations: None

Construction Induced Runoff Observations: None

Photo Documentation: None

Other:

WORK COMPLETED

1. Remtech completed the erosion control blanket today. 8-in staples were placed in the designated diagonal pattern over areas previously held down with 6-inch staples along the edges and seams.

2. Remtech continued demobilization activities and general site cleanup.

3. Holocene Drilling abandoned EW-14s, finished the EW-14s replacement well, and added a riser section to EW-16s. Holocene Drilling made another attempt to retrieve the transducer from MW-Ks. After repeated attempts, Holocene concluded that the transducer was not in the well. This was confirmed when the transducer was found in the shop building. Apparently, somebody pulled the transducer out or found it on the ground and moved it to the shop building without informing anybody else on-site.

4. Pacific Fence continued repair of the perimeter fence along the bank. They completed placing fence posts along the top of the bank.

NOTES/ISSUES

None

Prepared By: Mike Coenen

Title: Oversight Engineer

Signature:



ecology and environment, inc.

DAILY FIELD REPORT NO.: 71

Date: 7/30/2003 **Day:** Wednesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: <u>X</u>	Morning: <u>63 °F</u>	Clean: <u> </u>
Part Clcy: <u> </u>	Midday: <u>85 °F</u>	Dusty: <u>X</u>
Overcast: <u> </u>	Afternoon: <u>99 °F</u>	Muddy: <u> </u>
Rain: <u> </u>		Other: <u> </u>
Fog: <u> </u>		
Snow: <u> </u>		
Other: <u> </u>		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	5	Mark Henry was not on-site.
2	Pacific Fencing	4	Repair or replace fence.
3	David Evans and Associates (DEA)	2	Survey in Benchmark

VISITORS

Time In	Time Out	Name	Representing	Remarks
14:50	15:20	Don Larson	Cascade Drilling	Site Walk

MAJOR EQUIPMENT ON SITE

CAT 950 Loader
2000 Gallon Water Truck
CAT 322B Tracked Excavator
CAT 426B (turbo) Backhoe
Pressure washer/steam cleaner
80,000 GVW Dump truck
80,000 GVW Dump truck

MATERIALS DELIVERED TO SITE

No more project related material deliveries expected.

NONCONFORMANCES NOTED

None

WHO WAS NOTIFIED?

SAFETY CONCERNS NOTED

None

WHO WAS NOTIFIED?



ecology and environment, inc.

DAILY FIELD REPORT NO.: 71

Date: 7/30/2003

Day: Wednesday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

RIVER CONDITIONS NOTED

Morrison Bridge Gage:	3.93	ft. NGVD	Low tide at 17:30
River Stage at Site:	3.83	ft. NGVD	
NAPL Sheen Observations:	None		
Construction Induced Runoff Observations:	None		
Photo Documentation:	None		

Other:

WORK COMPLETED

1. Remtech continued demobilization activities and general site cleanup. Additionally, they completed the permanent wall crossings, cleaned the decon pad, poured additional concrete around the thrust block for the 6-in. water line on the south side of the site, and repaired the surface completion for MW-Ks.
2. Remtech backfilled the debris disposal pit using one operator and a loader.
3. Pacific Fence continued repair/replacement of the perimeter fence along the bank. They repaired most of the fence south of the bulkhead. They need to string barbed to complete this section. North of the bulkhead, they placed top rail to the post where the access gate for EW-23s is located.
4. DEA surveyed in the new benchmark but have not stamped the coordinates and elevation on the brass cap yet.

NOTES/ISSUES

None

Prepared By: Mike Coenen

Title: Oversight Engineer

Signature:



ecology and environment, inc.

DAILY FIELD REPORT NO.: 72

Date: 7/31/2003

Day: Thursday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: <u>X</u>	Morning: <u>63 °F</u>	Clean: <u></u>
Part Cldy: <u></u>	Midday: <u>77 °F</u>	Dusty: <u>X</u>
Overcast: <u></u>	Afternoon: <u>86 °F</u>	Muddy: <u></u>
Rain: <u></u>		Other: <u></u>
Fog: <u></u>		
Snow: <u></u>		
Other: <u></u>		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	6	Mark Henry was on-site.
2	Pacific Fencing	2	Repair or replace fence.

VISITORS

Time In	Time Out	Name	Representing	Remarks
10:50	13:40	Chad Nancarrow	E & E	Final Site Walk
11:00	14:40	John Montgomery	E & E	Final Site Walk
11:00	13:00	Steve Campbell	DEQ	Final Site Walk
11:00	13:00	Jill Kiernan	DEQ	Final Site Walk

MAJOR EQUIPMENT ON SITE

MAJOR EQUIPMENT ON SITE	MATERIALS DELIVERED TO SITE
CAT 950 Loader	No more project related material deliveries expected.
2000 Gallon Water Truck	
CAT 322B Tracked Excavator	
CAT 426B (turbo) Backhoe	
80,000 GVW Dump truck	
80,000 GVW Dump truck	

NONCONFORMANCES NOTED

NONCONFORMANCES NOTED	WHO WAS NOTIFIED?
None	

SAFETY CONCERNS NOTED

SAFETY CONCERNS NOTED	WHO WAS NOTIFIED?
None	



ecology and environment, inc.

DAILY FIELD REPORT NO.: 72

Date: 7/31/2003

Day: Thursday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

RIVER CONDITIONS NOTED

Morrison Bridge Gage:	3.57	ft. NGVD	Low tide at 18:00
River Stage at Site:	3.47	ft. NGVD	
NAPL Sheen Observations:	None		
Construction Induced Runoff Observations:	None		
Photo Documentation:	None		
Other:			

WORK COMPLETED

1. Remtech continued demobilization activities and general site cleanup.
2. Pacific Fence continued repair/replacement of the perimeter fence along the bank. They need to hang gate by EW-23s, string barbed wire, and finish stringing fence to swing gate by FWDA. Additionally, they need to repair fence where tree fell in FWDA.

NOTES/ISSUES

1. DEQ, E & E, and Remtech conducted the final site walk today. All involved concluded the project was at substantial completion. One additional daily construction will be submitted when the all site work is 100% complete. The remainder of the site work includes completing the fence repairs and demobilization.

Prepared By: Mike Coenen

Title: Oversight Engineer

Signature:



ecology and environment, inc.

DAILY FIELD REPORT NO.: 73

Date: 7/31/2003 **Day:** Thursday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

Weather	Temperature	Site Conditions
Clear: <u>X</u>	Morning: <u>63 °F</u>	Clean: <u> </u>
Part Cldy: <u> </u>	Midday: <u>85 °F</u>	Dusty: <u>X</u>
Overcast: <u> </u>	Afternoon: <u>99 °F</u>	Muddy: <u> </u>
Rain: <u> </u>		Other: <u> </u>
Fog: <u> </u>		
Snow: <u> </u>		
Other: <u> </u>		

CONTRACTOR(S)/SUBCONTRACTOR(S)

	Contractor/Subcontractor	Crew Size	Remarks
1	Remtech, Inc.	6	Mark Henry was on-site.
2	Pacific Fencing	2	Repair or replace fence.

VISITORS

Time In	Time Out	Name	Representing	Remarks
10:50	13:40	Chad Nancarrow	E & E	Final Site Walk
11:00	14:40	John Montgomery	E & E	Final Site Walk
11:00	13:00	Steve Campbell	DEQ	Final Site Walk
11:00	13:00	Jill Kiernan	DEQ	Final Site Walk

MAJOR EQUIPMENT ON SITE

MAJOR EQUIPMENT ON SITE	MATERIALS DELIVERED TO SITE
CAT 950 Loader	No more project related material deliveries expected.
2000 Gallon Water Truck	
CAT 322B Tracked Excavator	
CAT 426B (turbo) Backhoe	
80,000 GVW Dump truck	
80,000 GVW Dump truck	

NONCONFORMANCES NOTED

NONCONFORMANCES NOTED	WHO WAS NOTIFIED?
None	

SAFETY CONCERNS NOTED

SAFETY CONCERNS NOTED	WHO WAS NOTIFIED?
None	



Ecology and environment, inc.

DAILY FIELD REPORT NO.: 73

Date: 7/31/2003 **Day:** Thursday

Project Title: McCormick & Baxter Barrier Wall Construction
E & E Project No.: 001688.OY02.25.01

Client: ODEQ

RIVER CONDITIONS NOTED

Morrison Bridge Gage:	3.93	ft. NGVD	Low tide at 17:30
River Stage at Site:	3.83	ft. NGVD	
NAPL Sheen Observations:	None		
Construction Induced Runoff Observations:	None		
Photo Documentation:	None		
Other:			

WORK COMPLETED

1. Remtech continued demobilization activities and general site cleanup.
2. Pacific Fence completed fence repair in all areas including damage caused by a fallen tree in the FWDA. Pacific Fence also repaired damaged fence identified by E & E as potential access areas for trespassers.
3. DEA complete the new benchmark in the FWDA by stamping coordinates and elevation on the brass cap.

NOTES/ISSUES

None.

Prepared By: Mike Coenen

Title: Oversight Engineer

Signature:

H

Photodocumentation

PHOTOGRAPH IDENTIFICATION SHEET

McCormick & Baxter Barrier Wall Construction

Project No. 001688.OY02.29.01

Photo No.	Date	Time	By	Direction	Description
1	4/01/03	14:11	CN	NW	Log displacement to allow room for silt fence installation.
2	4/07/03	13:22	MC	NW	Pushing woody debris riverward to allow for silt fence installation and working platform construction.
3	4/01/03	15:52	CN	NW	Installation of silt fencing (south of bulkhead).
4	4/30/03	9:32	MC	SE	Clearing and grubbing on the beach north of the bulkhead while installation of silt fence continues towards the south.
5	5/01/03	10:30	MC	SE	North beach with silt fence completely installed and approximately half the required clearing completed.
6	4/17/03	08:20	EM	NW	Clearing (tree removal) NW end of site.
7	5/01/03	10:03	AM	S	Visible erosion being stopped by bio-bags and silt fence.
8	4/09/03	15:41	AM	S	Using level to calibrate Willamette River stage gauge.
9	4/01/03	08:45	CN	E	Survey crew performing layout survey for wall alignment.
10	4/01/03	08:45	CN	W	Wall centerline stakes near STA 37+00.
11	4/01/03	08:51	CN	E	Survey instrument (Total Station) operator.
12	4/02/03	8:00	AM	Down	8" water line (near Sta. 38+00/1+00) cut and blind flange installed.
13	4/15/03	13:22	RW	N	Exposed pressurized sewer lines (20- and 30-inch).
14	4/15/03	14:05	RW	S	Stake showing separation of the 20- and 30-inch pressurized sewer lines.
15	4/17/03	9:43	MO	Down	Geotechnical engineer preparing an inclinometer for installation.
16	4/17/03	10:12	MO	W	Installation of an inclinometer.
17	5/07/03	11:54	AM	SW	E & E field staff taking inclinometer measurements.
18	4/03/03	15:49	AM	S	Slurry mixing operations--bentonite in bag suspended above venturi mixer.
19	4/08/03	10:55	AM	W	Slurry mixing pond.
20	4/08/03	16:15	MC	W	The slurry trench specialist sounding the lead-in trench at STA 38+60.
21	4/15/03	15:41	AM	Down	Excavating within wood chip area near STA 37+50.
22	4/10/03	10:29	MC	S	Stockpile of separated wood chip.
23	4/22/03	14:00	EM	W	North corner lead-in trench excavation (STA. 15+00).
24	5/01/03	9:12	AM	E	Trench excavation--AINW observer (watching for artifacts), slurry trench specialist, and all excavation crew in APRs. Excavation near STA. 18+00.
25	5/01/03	9:15	AM	E	Mixing and placing S-B mix (foreground) and slurry trench excavation (background).

PHOTOGRAPH IDENTIFICATION SHEET

McCormick & Baxter Barrier Wall Construction

Project No. 001688.OY02.29.01

Photo No.	Date	Time	By	Direction	Description
26	5/01/03	9:15	AM	E	Dry bentonite being added to mixing operation.
27	4/21/03	9:04	AM	N	Bulldozer being used for S-B mixing and placement.
28	4/10/03	10:42	MC	NE	S-B backfill placement at STA 38+60.
29	4/29/03	11:44	MC	NE	Trench progress sounding (background) and S-B mix placement (foreground).
30	4/21/03	13:20	MC	W	Dozer being utilized to push S-B backfill mixture into trench at approximately STA 38+00.
31	4/09/03	16:45	MC	NE	Field test equipment for the fresh slurry.
32	4/14/03	13:12	MC	NW	Slurry trench specialist checking the slump of the S-B backfill.
33	5/06/03	16:07	EM	NE	Drilling for S-B wall confirmation samples (STA 38+68).
34	6/5/03	13:20	MC	SW	Constructing S-B wall protective cap near STA 17+00.
35	6/4/03	14:58	MC	SW	Roller compaction of the protective cap near STA 18+50.
36	9/26/03	8:25	EM	NW	Permanent road crossing over S-B wall near STA 24+50.
37	9/26/03	8:25	EM	NW	S-B wall centerline stakes and protective berm near shop building.
38	4/01/03	17:15	CN	N	Assembling the 3900 Vicon Crane.
39	4/10/03	10:15	EM	SE	Positioning I-beam template/guide for sheet pile.
40	4/08/03	14:45	EM	NW	Constructing sheet pile working platform (south of bulkhead)
41	4/7/03	14:30	MC	NW	Unloading sheet pile from truck.
42	4/10/03	11:10	MC	NW	Crane with sheet pile being moved into position.
43	5/01/03	9:59	AM	W	Sheet pile crew in bucket lift aligning 80' sheet.
44	4/16/03	17:02	MC	SE	Sheet pile driving operation at approximately STA. 4+00.
45	4/10/03	15:15	AM	N	Plumb being checked with magnetic level prior to driving sheet to grade.
46	6/30/03	15:56	AM	W	Refusal sheet being cooled and lubricated using water.
47	6/16/03	15:15	AM	W	Torching off the top of a sheet after a fatigue failure during hard driving.
48	9/25/03	11:05	EM	N	Refusal sheet with tip elevation torch-cut into it (FWDA).
49	6/24/03	08:25	MC	NE	Miscellaneous debris disposal cell.
50	5/21/03	18:09	AM	S	Potholing to assess the amount of contamination in the interceptor trench.

PHOTOGRAPH IDENTIFICATION SHEET

McCormick & Baxter Barrier Wall Construction

Project No. 001688.OY02.29.01

Photo No.	Date	Time	By	Direction	Description
51	6/30/03	8:53	AM	S	Excavating interceptor trench to further capture source area. Spoils are being hauled and placed within the wall.
52	7/02/03	8:44	AM	NW	Interceptor trench spoils disposal cell within the barrier wall.
53	7/14/03	15:50	AM	S	Bluff north of bulkhead getting finish graded in preparation for erosion control mat installation.
54	7/08/03	11:54	AM	NW	Bluff south of the bulkhead graded at 2:1 for stabilization and erosion control.
55	7/08/03	9:08	AM	W	Bulkhead stabilized by grading the slope back and the removal of timber structure.
56	7/29/03	12:45	AM	NW	Jute mat erosion control placed and being stapled on the north end near tie in.

Key:

NA	=	Not Applicable	N	=	North
No.	=	Number	NE	=	Northeast
AM	=	Andrew Murphy	NW	=	Northwest
MC	=	Mike Coenen	S	=	South
EM	=	Erin Murphy	SE	=	Southeast
CN	=	Chad Nancarrow	SW	=	Southwest
MO	=	Mark Ochsner	E	=	East
S-B	=	Soil-Bentonite	W	=	West
STA	=	Station			

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intentionally left blank.



Photo 1 Log displacement to allow room for silt fence installation.
Direction: Northwest



Photo 2 Pushing woody debris riverward to allow for silt fence installation and working platform construction.
Direction: Northwest



Photo 3 Installation of silt fencing (south of bulkhead).
Direction: Northwest



Photo 4 Clearing and grubbing on the beach north of the bulkhead while installation of silt fence continues towards the south.
Direction: Southeast



Photo 5 North beach with silt fence completely installed and approximately half the required clearing completed.
Direction: Southeast



Photo 6 Clearing (tree removal) at NW end of site.
Direction: Northwest



Photo 7 Visible erosion being stopped by bio-bags and silt fence.
Direction: South

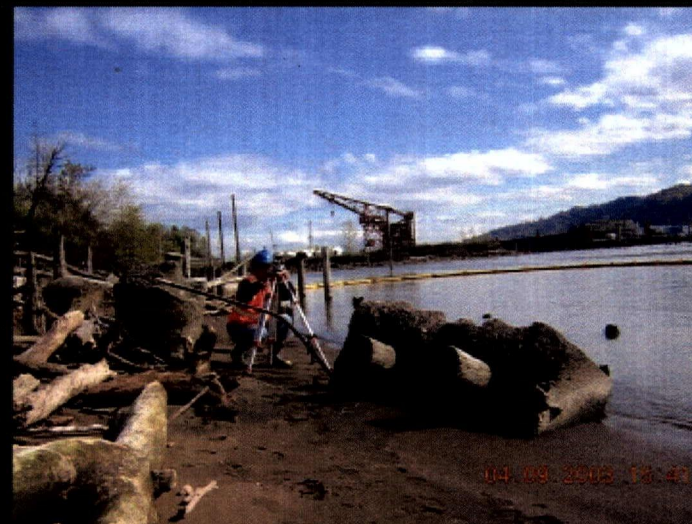


Photo 8 Using level to calibrate Willamette River stage gauge.
Direction: South



Photo 9 Survey crew performing layout survey for wall alignment.
Direction: East



Photo 10 Wall centerline stakes near STA 37+00
Direction: West



Photo 11 Survey instrument (Total Station) operator.
Direction: East



Photo 12 8" water line (near STA 38+00/1+00) cut and blind flange installed.
Direction: Down



Photo 13 Exposed pressurized sewer lines (20 and 30-inch).
Direction: North



Photo 14 Stake showing separation of the 20 and 30-inch pressurized sewer lines.
Direction: South



Photo 15 Geotechnical engineer preparing an inclinometer for installation.
Direction: Down



Photo 16 Installation of an inclinometer.
Direction: West



Photo 17 E & E field staff taking inclinometer measurements.
Direction: Southwest



Photo 18 Slurry mixing operations - bentonite in bag suspended above venturi mixer.
Direction: South



Photo 19 Slurry mixing pond.
Direction: West



Photo 20 The slurry trench specialist sounding the lead-in trench at STA 38+60.
Direction: West



Photo 21 Excavating within wood chip area near
STA 37+50.
Direction: Down



Photo 22 Stockpile of separated wood chips.
Direction: South



Photo 23 North corner lead-in trench excavation
(STA 15+00).
Direction: West



Photo 24 Trench excavation-AINW observer (watching
for artifacts), slurry trench specialist, and all
excavation crew in APRs. Excavation near
STA 18+00. Direction: East



Photo 25 Mixing and placing S-B mix (foreground) and slurry trench excavation (background).
Direction: East



Photo 26 Dry bentonite being added to S-B mixing operation.
Direction: East



Photo 27 Bulldozer being used for S-B mixing and placement.
Direction: North



Photo 28 S-B backfill placement at STA 38+60.
Direction: Northeast



Photo 29 Trench progress sounding (background) and S-B mix placement (foreground).
Direction: Northeast



Photo 30 Dozer being utilized to push S-B backfill mixture into trench at approximately STA 38+00.
Direction: West



Photo 31 Field test equipment for the fresh slurry.
Direction: Northeast



Photo 32 Slurry trench specialist checking the slump of the S-B backfill.
Direction: Northwest



Photo 33 Drilling for S-B wall confirmation samples (STA 38+68).
Direction: Northeast



Photo 34 Constructing S-B wall protective cap near STA 17+00.
Direction: Southwest



Photo 35 Roller compaction of the protective cap near STA 18+50.
Direction: Southwest



Photo 36 Permanent road crossing over S-B wall near STA 24+50.
Direction: Northwest



Photo 37 S-B wall centerline stakes and protective berm near shop building.
Direction: Northwest



Photo 38 Assembling the 3900 Viccon Crane.
Direction: North



Photo 39 Positioning I-beam template/guide for sheet pile.
Direction: Southeast



Photo 40 Constructing sheet pile working platform (south of bulkhead).
Direction: Northwest



Photo 41 Unloading sheet pile from truck.
Direction: Northwest



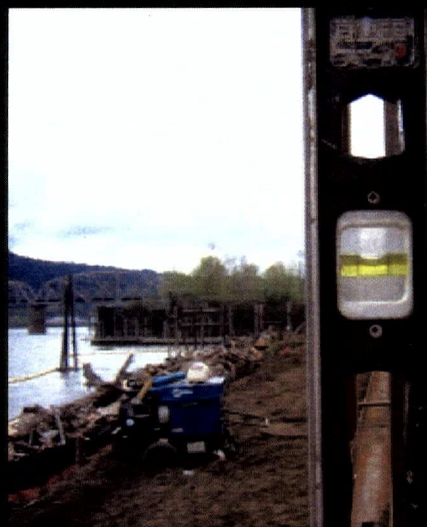
Photo 42 Crane with sheet pile being moved into position.
Direction: Northwest



Photo 43 Sheet pile crew in bucket lift aligning 80' sheet.
Direction: West



Photo 44 Sheet pile driving operation at approximately STA 4+00.
Direction: Southeast



04 10 2003 17 22

Photo 45 Plumb being checked with magnetic level prior to driving sheet to grade.
Direction: Northwest



06 30 2003

Photo 46 Refusal sheet being cooled and lubricated using water.
Direction: West



06 16 2003

Photo 47 Torching off the top of a sheet after a fatigue failure during hard driving.
Direction: West



06 24 2003

Photo 48 Refusal sheet with tip elevation torch-cut into it (FWDA).
Direction: North



Photo 49 Miscellaneous debris disposal cell
Direction: Northeast



Photo 50 Potholing to assess the amount of
contamination in the interceptor trench.
Direction: South



Photo 51 Excavating interceptor trench to further
capture source area. Spoils are being hauled
and placed within the wall.
Direction: South



Photo 52 Interceptor trench spoils disposal cell within
the barrier wall.
Direction: Northwest



Photo 53 Bluff north of bulkhead getting finish graded in preparation for erosion control mat installation.
Direction: South

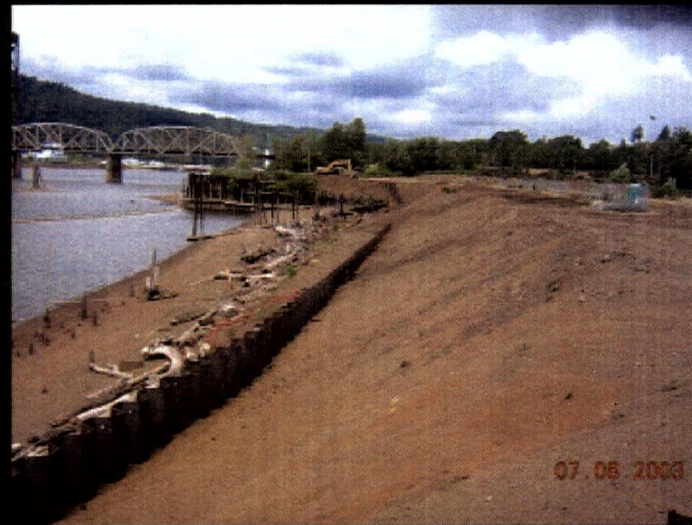


Photo 54 Bluff south of the bulkhead graded at 2:1 for stabilization and erosion control.
Direction: Northwest



Photo 55 Bulkhead stabilized by grading the slope back and removal of timber structure.
Direction: West



Photo 56 Jute mat erosion control placed and being stapled on the north end near tie in.
Direction: Northwest